

CREATING NEW IDEAS

Showing How, When and Where.

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PREFACE

THESE pages are offered to men and women who have the urge to institute changes—material, mental or spiritual—in our human life, each change to confer a new benefit on the individual or the group. A certain number of people do not need the assistance offered here, they are already equipped by natural ability, education and experience. But quite a respectable number are not so fortunately placed; hence the detailed suggestions which follow may contain just those hints that will be found serviceable.

PRINTED IN GREAT BRITAIN BY
SALISBURY COMPANY (PRINTERS) LTD.,
CREED LANE, E C 4

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INTRODUCTION

A LOOK ALL ROUND THE SUBJECT.

STODGY MINDS

WHY new ideas? Are not the old and tried ideas good enough?

I shall not spend my time in answering such foolish questions. They really answer themselves. The battle of the new and the old is being fought every day in every sphere of thought and action. It is an inevitable struggle and victory in the long run is achieved by modern minds as the outcome of experience and experiments. This is evolution in the very act—that change with advantage which we call progress.

Take military matters. When Napoleon began soldiering it was the belief among leading military men on the Continent that there could be nothing new in war!

(I can hear your derisive 'Oh! Oh's!') But the little lieutenant showed these stodgy fellows a new way. He did not have all his notions written down in his pocket book. He knew they would come to him when needed. And that is the primary state of mind to create and uphold

PAST + PRESENT PROGRESS

Stalin in 1939 said of his military staff that the older ones had a tendency to look backwards and were in peril of losing the feeling for new ideas. No doubt. And he made many changes in consequence. But looking back with is not wrong in itself indeed it is a necessity in order

to get the right perspective. The defect of the old mind is that it looks at the past too often and too long. And sometimes the younger mind does not look back often enough. The insistent lessons of experience are despised. Hence to keep the mind young and responsive one must avoid prejudices *e.g.* that the old is no good because it is old and that the new is good simply because it is new. Hitler's proposed new order for Europe was new enough in all conscience but it was not attractive on that account in fact it was not an *order* at all. It was a gigantic disorder.

Nevertheless time marches on and ideas must keep in step. We require improvements in all the departments of the home of business in the social sphere in the arts and in politics both national and international. In all these associations there is no standing still. Somebody must first clear away the impediments that bar the way to progress and somebody else must provide the new elements and show us how to employ them. Listen to the wise words of Alfred North Whitehead a philosopher who has made all knowledge his province. A race preserves its vigour so long as it harbours a real contrast between what has been and what may be and so long as it is nerved by the vigour to adventure beyond the safeties of the past. Without adventure civilization is in full decay (1). And yet there are people who either do not like this spirit of adventure or are afraid of its possible results.

SCARED OF NEW INVENTIONS

Readers of daily newspapers will know that certain of our leaders of thought believe we have too many new contraptions of all kinds. One professor for instance has

(1) *Adventures of Ideas*

proposed a veto on new inventions permits for the use of which would be issued by a Joint Board of Scientists and Philosophers (*) 'Gentlemen you may smoke! And laugh! But perchance you may later agree that *sometimes* an invention may be seized by the Government. Was not Maxim's gun silencer so seized? It would never do to place such a weapon in the hands of murderous gangsters who could then indulge in soundless shooting and killing. And it is conceivable that new and deadly weapons for war might be diverted to peace time uses by unscrupulous persons so that some form of public control is not a foolish idea.

But protection is claimed in the interests of labour. There is nowadays a dead set against inventions which reduce production costs and lead to extensive unemployment. Lord Rutherford the great physicist has said that we may have to control the use of new ideas and inventions in the public interest and he suggested the formation of a prevision Committee composed of representatives of business industry and science. This committee would advise on all issues in which restraint was considered advisable.

The whole matter is one that may be left to the future. There must be no brake put on inventive effort for if it should happen that a dangerous weapon is put before the Patent Office for the usual protection or a new machine which would throw thousands out of employment the intelligence of Councils and Committees is enough to overcome such difficulties.

No. We must cultivate the creative mind wherever we find it. When Jesus Christ was born it was said that there was no room for him in the inn. Often enough there is

at first no room for genius. It has to live in the manger or the garret or try what it can do with inadequate equipment—perhaps none at all. This is not necessarily evil in every sense but on the other hand genius and talent may be lost sight of because outrageous conditions have prevented even a first expression.

THERE'S ALWAYS SOMETHING NEW UNDER THE SUN

If the scope for new ideas is becoming smaller why are we having books with titles which suggest that the world is still in a state of dense ignorance? If anybody asked you whether or not you know what history is you would feel a trifle indignant especially if history was an honour's subject with you at school and college. And yet *What is History?* comes from the pen of Prof. Lamprecht and a glance at the big catalogue of books gives many such titles. *What Is Art?* by Tolstoy. *What Is Beauty?* by Carritt. *What Is Electricity?* by Gibson. Doubtless if we searched we should find *What Is Town Planning?* *What Is An Invention?* *What Is Bolshevism?* and a host of others.

What does it all mean?

Simply this—that the farther we advance the more we see the more we know the more there is to be known. Every subject has its unplumbed depths. Every invention suggests a newer and a better one. There is no finality anywhere.

So don't be afraid that you will never get a chance just because all the chances appear to have been taken before you came on the scene. The world bristles with chances. True not all of them are shouting to get your attention. But a little *looking* a little *thinking* and a little bit of *action* will soon put you into touch with possibilities.

During one of his least hopeful moments Goethe came to the conclusion that there was no new thing under the

sun and that everything had already been conceived and expressed. As if finality in all things had been reached during his lifetime!

— This is a mood to be avoided. The finest picture has not yet been painted nor have we looked on the greatest poem. Still *more striking inventions* will appear to astonish the world making the radio marvellous as it is a bit of kindergarten entertainment. Some sciences are still in their infancy new sciences are waiting to be born.

ADVANCE? OR RETREAT?

There comes a time in nearly all successful undertakings when failure due to lack of change and adaptation begins to insinuate itself. For instance a certain type of film has proved itself popular. When does that popularity begin to wane? In other words when ought the High Command to start a new idea? The answer is found with the men who have studied the signs of the times also the man who watches the box office accounts closely. Thus Mr Campbell Dixon a critic ventures to act as adviser to Film Companies. A few of the characters I could do without in 1939 are (a) Gossip writers quarrelling with band leaders (b) wise cracking reporters (drunk or sober) (c) wise cracking sob sisters who cause suicide in reel three and put everything right by sending flowers (d) Russian Grand Dukes who bravely serve vermicelli all the evening but whip out monocles and decorations at the stroke of twelve (e) good hearted slatterns who deliberately disgust their daughters so that they may live happily ever after with adopted parents but cannot forbear a peep through the window at the wedding before the policeman moves them on. (1) Is this the only industry to which such criticism can be supplied?

(1) Article in the *Daily Telegraph* (1938)

NEW IDEAS IN GOVERNMENT

We need new ideas not only in the form of inventions or in the sciences and the arts but in the sphere of sociology and political science. Why should we regard socialism in its present form as a final policy? There is a newer and better idea to be had for the seeking one that would remedy evils without destroying principles of freedom. The slogan could well be this *control not abolition*. Instead of progress by destruction it would be advance by fulfilment. We ought to begin our economic planning *de novo* and devise a system based on the situation *as we find it*, not on Karl Marx's *Capital*. That book with its nineteenth century dogmas is too much out of date for service in modern conditions. Economic schemes that are founded in the spirit of revenge can never prosper. The plans that succeed are arrangements between men of good will not a forced peace between warring factions.

The modern Brain Trust does not seem to have prospered in the manner that was expected of it yet in itself it is an excellent idea. And the State of the future although not supreme *per se* may yet begin to think of conscripting men of outstanding ability and experience for the welfare of the community. At first there will be some demur in the name of personal liberty but if the State institutes a call to take part in government as the Church has a call to the Ministry this request for individual service entailing sacrifices no doubt will become a work of honour.

ORIGINALITY AS AN INDIVIDUAL CONTRIBUTION

What kind of mentality has the man who gives birth to new ideas? I picture him as possessing observant eyes and an objective intelligence, that is he is in the habit of using his senses and has a keen feeling for facts. He

is a man who likes to know. He has a tendency to compare and contrast the various items which find their way into his mind and this gives rise to little speculations expressed in such phrases as "I wonder whether" or "How does it happen that" ?

He has also plenty of emotional drive—the urge to do something. Very often he does not know what this something is. But did not Oliver Cromwell aver that one never rises so high as when one does not know where one is going? I have often marvelled at that saying, but I recall that Cromwell believed in divine leadership—by being guided to a verse of Holy Writ, by deep conscious impressions and by dreams. We are not all like that. Our kind of urge is different even though the end in view is not always clear.

But clarity, with a plan in hard outline, is not long in coming. Then work begins. The new idea assumes a shape. This ardent individual is making his way.

Peruse any history of the growth of ideas and you will find that it was the *individual* who made discoveries, not the nation. Democracy is, doubtless, the best form of government but Truth in the sciences did not originate in that way—of the people, by the people, for the people. The distance of Venus from the earth is not decided by a majority vote in the Congress or the House of Commons. A committee of politicians may decide on the distribution of wave lengths for radio, and yet have a better knowledge of the wave lengths on Bournemouth beach, or on the sands of Coney Island. We look to the individual for concepts, not the group. Nevertheless, the group has its place.

So to avoid the deadening effects of imitation I will repeat, for the sake of emphasis, a conversational phrase from the sphere of personality culture "You are you." It

means several things. First that you have to *adapt* all rules and regulations to your own temperament inasmuch as your mental rhythms may be more rapid than usual involving less time in concentrated effort and more in spontaneous attention to other matters. As we shall see later this turning away quite surprisingly may bring about the fertile mood.

Second however much otherness—that is thoughts of other people we introduce into our plans whatever pains we take to avoid narrow lines of living we can never escape *ourselves*. On this point Maeterlinck wrote some of his wisest words. He said Do not forget that nothing happens to us that is not of the nature of ourselves.

Climb the mountain or go down into the village travel to the ends of the world or take a walk round the house you will meet only yourselves on the paths of chance. A gloomy view? Not at all. It assures you and me of intellectual and moral justice. *What we sow in our mental life we shall also reap.* But there is more in it than that there is the possibility of reaping what others have sown—if in your mind and soul you have the impulse to learn by observation and critical enquiry. Character is destiny. A character marked by indifference and indecision will be meeting indifference and indecision on the highways of fate. This is not pious moralising it is mental and moral science declaiming one of its irrefragable laws. So watch your mental step.

HAVE YOU A FEELING FOR THE FUTURE?

It was said of Napoleon when still a young man. He has so much of the future in his mind. He had great ambitions of course but this particular remark was intended to convey not only a keen eye for the signs of the times in the Europe of his day but a readiness to take an active part in shaping the destiny of France and of other

countries. He was ever busy divining the meaning of this event, and that, the future was in his very soul.

Having studied quite a number of business magnates—some of them in person and others in biographies—I can say quite confidently that many of them became prominent for reasons which look like good luck only, but the majority of them pushed forward because, as Emerson put it, they had the thing in them—the future, their own especially, engaged their attention early and late—their minds were centres for gauging and preparing for the coming years. They believed they could see the shape of things to come.

WE FORMULATE OUR FINDINGS

Success in originating new ideas is not a trick, or merely a bit of luck—it is a science and an art. And it is not so difficult in the precise way so many people have supposed. The Chinese have a saying—'Nothing is difficult when you know how.

The qualifications to be developed are these —

What you must *know*

What you must *feel*

What you must be able to *do*

These are the demands made upon everybody whose job is to enrich the world with additional mental interests or practical advantages.

(1) *You must know your subject, know yourself, know your fellow men, and know exactly what you want to do.*

Here I will do no more than offer brief comments. Fuller analyses will come later.

The men who have provided the world with better things have been men who have literally lived and slept with new notions. They know their work. What advantage is there in playing about with a notion for improving the ailerons of a flying machine unless you know ailerons inside out?

You have a self with personal peculiarities and preferences *re* moods place and times for successful thinking which have to be accepted otherwise new ideas will be hindered in their approach. Robert Burns as a poet liked to get his lines while tilting back in his chair. To get the best out of your own brains you must know your own—yes it's an awful word—idiosyncrasies. Perhaps the phrase mild eccentricities would do just as well.

You will not know what the world is thinking unless you study human nature in action. To know your fellow men is to know the signs of the times.

Finally, the clear knowledge of what you are aiming at now and eventually, will keep the mind properly focused. Lack of concentrated effort is a mental curse. *

(2) *New Ideas gravitate towards love*, that is minds in which there is an interest in some undertaking that is both deep and passionate.

We have just dealt with what you must *know*. Here is what you must *feel*. Further,—and this is important—the more you love your idea the more you will get to know about it the better your thinking will be and the brighter your originality.

Another point all ideas appear to have a wave length, as it were, and as the human mind seems to have both receiving and broadcasting facilities of sorts, you may expect every now and again to hear that other people are interested in developments which you thought were exclusive to yourself.

(3) *As is the desire so is the achievement*. In other words success as always, depends a good deal on enthusiasm.

This is the road to *action* that is the ability to *perform*. New ideas have to be expressed in words or embodied in a material invention or they must in some other way be made actual. Herein is the trinity of qualifications complete thinking feeling doing.

(4) *The right mental attitude is important*. Expect new ideas and after sustained effort they will come. This is a law of the mind which applies to all kinds of idea producers e.g. novelists window dressers inventors statesmen. It is hope and faith in combination.

The human mind responds to suggestion. If you say to yourself I can't—you can't—but if you say I can then other things being equal you *can*.

What is an attitude? Take an example in contrast David the Psalmist said When I consider the heavens which Thou hast made what is man that Thou art mindful of him? Size induced a feeling of insignificance. But G. P. Runsey the great mathematician looking at the same heavens said I am not impressed. Size did not affect his imagination. There is an error of excess in both attitudes. Hence the value of the right attitude.

To help the reader I have devised some commendations which I have called

THE ATTITUDES

- 1 Blessed is the man who seeks new ideas in the spirit of hope and expectation. His desires shall be satisfied.
- 2 Blessed is the man who believes fervently and always that in every sphere of life we reap what we sow—and that right thought and right action inevitably produce the right results.

- 3 Blessed is the man who looks with favour on the scientific method hereby using his reason to the honour of God
- 4 Blessed is the man who believes in seeking the truth the whole truth and nothing but the truth for to him truth ever draws nearer
- 5 Blessed is the man who seeks first the ideal of service to the world in general for to him the other and more personal things will be added
- 6 Blessed is the man who accepts the Eternal and Unchangeable for he will learn to believe in himself

(5) *You must learn how to look with your eyes, but more particularly with your mind* In fact you will have to use both eyes and mind at the same time It is one thing to see steam coming from a kettle It is another to see the use that can be made of it

Looking is an art You may think you know how to look already and maybe you are not so bad But scores of people who think they are good observers are mistaken New ideas are all round us yet the majority of people take no notice They are not skilled observers

(6) *Imagination rules the world* So said Napoleon It is true of the world of ideas Imagination deals with that which is not yet in existence and it thinks and thinks until the airy nothing becomes an actuality e.g. a machine a book an implement a policy

A real imaginer is more than a mere dreamer Not that we despise true dreamers It was derisively said of a certain young man in early Hebrew days Behold this dreamer cometh Yet that young fellow became one of the greatest men of his day

Dreaming of the right kind is controlled imagination in action. That's why lazing loafing and seeming idleness have been productive of startling variations in thought and practice. But we favour industry as a policy, rather than idleness.

✓ (7) *One of the secrets of creative thinking is to be expert in handling comparisons and contrasts*

This means the ability to perceive similarities and differences. It does not sound difficult. I know, and it need not be an ability you cannot develop.

If yours is a mind which is good at analysis you ought to forge ahead. Some of our great inventions have turned on likenesses which had been unperceived until the happy moment arrived in the brain activity of a certain individual. Frequently the same fruitful results issue from a study of differences, especially direct contrasts.

(8) *New ideas can flash into enquiring minds with the speed of light at 186 000 miles a second, or they may take many months even years to make themselves known. That's why the patient man often wins. There is a Dutch proverb which says that an ounce of patience is worth a pound of brain. No, not quite. And yet think highly of patience.*

(9) *Noise is a mental enemy. Secure quiet, therefore, remembering the words 'Be still and know.'*

Several kinds of knowledge depend on stillness for their coming. The kind which ends in original thinking as in new inventions is one of them.

(10) *Keep your records carefully, and don't forget the Idea Book which you look upon as a sort of Garden. You plant it with every fancy, notion, wonder, query, or solid*

question which occurs to you These germinate and grow
There will be surprises some day

(11) *Don't talk to other people about your projected new idea* I once told everything to a so called friend, in confidence, then when my plans were ready I placed them before the Director of a certain corporation only to find that the "friend" had forestalled me

CHAPTER I

THE THRILL OF NEW IDEAS.

IF you have ever sought for an idea, long and ardently—one that would solve a great difficulty, or do no more than prevent an immediate inconvenience—you do not need to be told that there is a sort of ecstasy in the finding. The find itself may not be, in the words of the parable, a pearl of great price, but the bliss of discovery is of the same nature. The thrill is unforgettable.

But if somebody else finds a new idea you may or may not be so pleased about it. If it is something which brings funds to your exchequer, you will hail it with gladness, and you will not withhold your admiration if its ingenuity appeals to your sensibilities. Should the article be merely serviceable, you will admit that it is "a good idea," but you will not dream about it. And if it is a something "so utterly utter" as to be offensive to the principles you have never questioned, you will be hostile indeed. The vast majority of people constitute a conservative block. They do not welcome a radical originality.

Everything seems to depend on the nature of the new idea. A housewife will become ecstatic about a new carpet sweeper, or a device which will save time and labour in the kitchen. But display a new idea in hats, and however good it may be, it will be rejected with scorn if its design strays too far from the fashion of the day. A new tin opener which carves with great rapidity the circle top of the salmon tin, and without producing a jagged edge, will be received joyfully by the grocer, but just propose some-

thing which treads on his theological or political corns and he will rise up in wrath against you

When George Stephenson tried to convert Sir Astley Cooper to his ideas of railways the knight exclaimed

Your scheme is preposterous in the extreme positively absurd You are proposing to cut up our estates in all directions for the purpose of making an unnecessary road And a writer of that day who rather favoured Stephenson's plans could permit himself to ask What can be more ridiculous than the prospect of locomotives travelling *twice as fast as stage coaches* (1)

But educated men and women are frequently no less resistant to new ideas when those ideas assault a cherished belief or principle Harvey's theory of the circulation of the blood was received with a Tut tut by the first doctor who heard of it and the second doctor said Tut tut and the third and the fourth until at last the whole medical world was vocal with its tuts A startling proposal gives many people mental indigestion they cannot stomach it This attitude of mind has won for itself the name of *misoneism*, i.e. a repugnance to innovations and in all probability you and I have our danger zones One word and we offer a blistering NO!

* * *

The intellectually adventurous Greeks were no exception St Paul knew that there was a crowd on Mars Hill who literally revelled in new ideas They lived for nothing else So he resolved to give them a psychological test He scored heavily As soon as he mentioned the resurrection the whole group began to Tut tut —politely of course The idea of a dead man rising again was too much They

(1) See Hankins's *Common Sense and Its Cultivation* : p. 170 f

offered to listen to another Pauline lecture, but they went away saying 'Babbler!' Even so You cannot put new wine into old bottles The *neu* demands the new, as when Sir Arthur Helps decided against the telegraph idea because it was likely to convey bad news rapidly and inaccurately! And that is one of the problems of existence for the individual and for the nation how can we conserve the real values of the past and move forward adventurously into the future?

But we are improving In the more recent centuries any teacher who claimed that in his practicable science $2+2=5$ would have been subjected to a medical enquiry Today the leading exponents of mathematics accept, for consideration, such notions as 'parallel lines may meet', that space may be curved, and, finally, that time flows both ways, backwards, and forwards, so that events happening in Stalin's Russia have something to do with Caesar's crossing the Rubicon Professor G N Lewis, who has proposed this theory, is no dogmatist And we are not his disciples But the difference is one of *attitude* The modern generation is prepared to tolerate notions which would have caused our forefathers to feel murderous

* * *

The new ideas I want to write about here are exceedingly varied in form indeed a complete treatise on their number and nature would be a weighty tome A copywriter in an advertising agent's office suddenly "gets" the right way to set forth the merits of his client's cigars His pencil races across sheet after sheet because, as he says 'ideas are funny things' Unless you put them down fresh from the mental mint you lose a mystic something which memory and later reflection are never able to restore (I believe he is right, too)

Then there is the copywriter's Principal who is faced with the fact that what he considered to be a fine advertisement has not pulled. He has been asking himself critical questions of which these are three —

- 1 Is the copy wrong?
- 2 Was the publication the right one?
- 3 Does any blame attach to the date of issue or the period of time in which the advertisement appeared?

At last he gets an idea as to the reason why? It sounds good. All the previous explanations are scrapped in favour of this new one. Yet this is not a new idea in the way in which the copywriter's idea was new. It is an *explanatory* idea but not new in the sense of being directly *creative*. And it is the creative type with which we are concerned in these pages

* * *

Six men met in the smoke room of a West End Hotel during the Coronation of the King. The conversation was discursive and covered a great variety of topics but a man who was present jotted down some of the aims and preferences which found expression. From this record I have selected those which concern the subject before us. These six men must have been a little out of the ordinary—but one never knows

- (1) I want to find a new method of marketing my lubricating oil
- (2) The MS of my first novel has been accepted but I have to contrive a new and happy ending. It's giving me no end of trouble
- (3) What am I? An organizer. My present job is to devise a plan on new lines—quite new—for a

Chain Store Company No not American
British capital and methods

- (4) The cost of light is going up So I have begun to work on an idea for a lamp Just now I'm stuck I need a new sort of wick But it's coming—coming
- (5) Yes a free lance journalist has to be new and fresh in all his work This is a factual age—don't *like* the word—and I am looking for a method of collecting and publishing new facts Weird facts—Any facts but I like the weird sort Remember that scientist who claimed that there was more gravitation near a certain city than anywhere else?
- (6) City planning is my real job but Yet it is one thing to plan and another to get a hearing Publication with details requires large spaces and audiences for lectures may be described as *fit* though few Any suggestions?

* * *

This is a representative group of idea seekers but if we could see into the minds of the people we meet in our daily experience the six men above mentioned would become six hundred or six thousand There is more brain action in this country than the pessimists allow But have these six men any clear views as to best ways and means of finding new ideas? We do not know, of course but we do know that it would be to their advantage if they did Recall the Chinese proverb that nothing is difficult when you know how It isn't *quite* true but there is a lot of truth in it And knowing how from the mental side is the subject of this little book

We used to hear a great deal about scientific management in industry. Some of it was just talk, talk, but most of it was the worship of the god-of-the-better-way. It sought in all round improvement in methods and its formal definition was to secure the detection and elimination of false effort. But there may be as much false effort in the use of the machinery of the mind as there is in the use of a factory contraption. There are conditions which favour originality and there are mental states which make it well nigh impossible.

These conditions and mental states will be discussed at some length and an endeavour will be made to avoid excesses in attention to technical matters for after all human life should always be human and the joy of attainment cannot be overlooked. Oh yes there's a thrill in new ideas. I will not turn aside to explain the word *Eureka*—you know the story already. But when the first man of the smoke-room conversation suddenly lights upon the needed marketing plan and the inventor has got his lamp wick and the budding novelist his happy ending isn't there a real glow of intellect and soul?

* * *

One of the very interesting narratives about the advent of a new idea is that which concerns Rousseau. It has often been told before but it is worth telling again because of its dramatic quality. He was walking to Vincennes in order to make enquiries about Diderot who was in prison. On the way he chanced to pick up a newspaper and in it he saw an announcement of a theme propounded by the Dijon Academy: *Si le rétablissement des Sciences et des Arts a contribué à épurer les mœurs*. If anything ever resembled a sudden inspiration, he wrote to a friend, it was the movement which began in me as I read this. All

at once I felt myself dazzled by a thousand sparkling lights, crowds of vital ideas flashed into my mind with a force and confusion which threw me into an unspeakable agitation palpitation oppressed me I sink under one of the trees in the Avenue and passed half an hour there'

Not all new ideas are accompanied by emotional excitement, at any rate not to the extent shown in the Rousseau instance Sir Isaac Newton appears to have reached his conclusions by slow approaches and even when he had made the most astonishing discoveries he seems to have pigeon holed the results and turned his attention to other matters One cannot imagine a modern research worker acting in that way But that Newton never experienced the thrill of discovery is unlikely, indeed the closing of his MSS was carried out because of the emotional reaction occasioned by the discoveries themselves

* * *

Are you among those who say, 'I want new ideas for profit' Well, are not *all* new ideas profitable? Profits are not confined to dividends in cash I readily admit that, commercially speaking there is more money in a simple invention than in, say, a book of poems Thus the man who thought of attaching a bit of rubber to the tip of a lead pencil, and patented the idea, made £20,000 out of it, whereas Sir William Watson could not at last get enough in royalties to pay for the cost of living He it was who wrote one of the finest couplets in English poetry

Magnificent out of the dust we came,
And abject from the spheres

But the profit of the poet's invention is that it is shared by the world, and remains in the world—like Milton's *Paradise Lost* billed outright to the publisher for a tenner!

Poets philosophers essayists *litterateurs* mystics and religious leaders may be described as members of the House of Interpreters their function is to make the meaning of life a little less obscure and to provide us with inspirational aids to right living for conduct is a fine art Would you not agree that any new light on the mysteries of existence is a spiritual profit to the people who have suffered much and are plagued with the fear that life itself is meaningless? I think you would Even the research worker in pure science who has persuaded himself that he is seeking new knowledge and not trying to increase his dividends will as likely as not enlarge our minds and souls we profit by his labours

In spite of surface signs to the contrary this generation is not dead to spiritual values It will not ignore a beautiful picture or a fine poem and bestow all its admiration on a new and striking sausage machine that will chew scraps of meat into tasty food in half the time the old machine did it We have a proper respect for mechanical ingenuity and it is foolish to set up false contrasts between the material and the spiritual but after all there is a difference and it was not set up by man It is inherent in the scheme of things

* * *

One of the most treasured of old books on my shelves is Freedly's *One Thousand Chances To Make Money* It was published in 1859 in London and no doubt earlier in Philadelphia the author being an American It consists of 416 pages of facts statistics suggestions and ideas Nothing comes amiss to him He ranges the whole planet There is a call for sugar mills in Siam paper mills are needed in California and somebody should take to heart the meaning of that slab of Portland Cement seen at the

Crystal Palace. He knows all the substitutes for genuine goods, and tells me that in Berlin coffee is made from acorns and chicory. It is often used, he says, to adulterate real coffee! He has heard that at Bathgate in Scotland 400 000 gallons of lubricating oil were manufactured from cannel coal and sold at 5/- per gallon. His knowledge perhaps not always accurate, is encyclopædic, and some of his suggestions prove him to be a man of fertile imagination. His 1,000th idea, for instance, is the fountain pen! The words he uses are "a substitute for pen and ink combining both in one instrument." It is a good example of a new idea in its initial stage. Completion comes only when he sees a way of making the combination practical.

Freedly is no dry as dust writer. He has a sense of humour, and we can see the smile on his face when he intimates that the author of *The Sin of Covetousness* haggled with the publisher for a long time about an extra penny in royalties. Again, Freedly gives a detailed account of Thoreau's *Walden Pond* with the accounts involved—the food bill was 1/1 a week! The one lesson from this old guide to prosperity is "Get the facts first of all, the whole of the facts, and nothing but facts." There is no better foundation on which to base new ideas, and that is why I have ventured to refer at some length to an eighty year old transatlantic tome.

The vital importance of business has been stressed by Professor A. N. Whitehead, a philosopher and mathematician of international reputation. He wrote the introduction to Donham's *Business Adrift*, and remarked that "a great society is a society in which its men of business think greatly of their functions. The behaviour of the community is largely dominated by the business mind." A physicist of great renown Sir Arthur Eddington, has

added a further testimony. In a newspaper interview in Toronto he told the special representative that economic problems are very much more complicated than those of the higher mathematics. This is a surprising deliverance and one would like to survey a collection of opinions for and against.

* * *

When is an idea an idea? You will guess what I mean. When can a man really say 'I've got a new idea'? Only when the thing is clear in his mind. And that may not come immediately: indeed some of the best ideas have been long delayed although a few can claim to have been immediate. Distinctive originality in any sphere—with the possible exception of poetry—passes through certain stages. Keats in *The Eve of St Agnes* wrote from experience when he said —

Sudden a thought came like a full-blown rose
Flushing his brow

But workers in the realms of the real seldom get the idea for a new typewriter ribbon in that way or for a petrol can with a much needed new kind of handle. What happens is that the idea exists in embryo as a *fancy* or a *notion* or a *suggestion* or a *glimmering* or a mere *impression*. Sir Walter Scott when seeking for a solution of some issue in the writing of a novel used to say 'I lie *summering* over things'. He believed in the ideas of the early morning: they helped him to pass from the formless stage to that of clear expression in language.

Truth it has been said is the daughter of Time and the seeker after new ideas will soon discover the fact. His embryonic notions may be annoyingly long in taking on the expected shape and sometimes he is half disposed to throw his notes into the fire and think of something else. Let

him wait. The inspiration most often comes in the period of waiting *after working*

* *

You may work in a sphere in which you hope to make a discovery. It may not be so ambitious as Boole's discovery of the analogies of logic and algebra or the similarity between algebra and geometry shown by Descartes but if you can find a way of producing a rubber which is easier to work and more durable even than the rubber now in use you can claim to be a discoverer. You will not rank maybe with discoverers of a new fact in Nature but before you are through with your invention you will be an experienced person in the handling of ideas.

Discoverers are at work in many fields. There is archæology for instance. When Rawlinson first saw the Rock of Behistun in Persian Kurdistan and looked with great curiosity at the three languages carved on its perpendicular surface he was fired with enthusiasm to know the meaning of those strange hieroglyphics. He risked his life to make a copy of one of the languages and after a couple of years close study he found the way to interpret all three of the ancient tongues. It was a great achievement for linguistics. And we recall Woolley's more recent discoveries at Ur a veritable reconstruction of the period we speak of as the Call of Abraham.

Turning again to science and the needs of modern civilization it is important to ask one question. When is a discovery not a discovery? When investigators think they have found something new and—have *not* found it. Here is a list of words —

hydrosiderum
Saturnum
junonium

vestium
crodonium
donium

Each of these was believed to be something entirely new in the form of matter, but the alleged discoverers were proved to have been mistaken—not at all a nice experience for a research scientist to go through. So if your proposed enterprise involves an idea that leads to a new fact, be very sure of your methods and test and re test your results.

This applies to the business man as much as to anybody else. If you think you have developed an amalgam of metals which can be produced at an extremely low cost, and gives a polish like burnished gold, the prospects are attractive indeed. But wait. Is there an insidious element in the compound which, during atmospheric changes, will display little clusters of defacing 'spots'? There is often one little test which is fatal!

* * *

Ideas that are new, really and truly original are often extremely elusive, they appear to be shy of expression and fight against embodiment in language. This often happens in the early morning between sleeping and waking, and the transition process is the reason why the thought plays a game of hide and seek. A strenuous effort to capture the elusive thing especially in a resolutely wide awake condition is an error in mental tactics. The better plan is to lie still and slowly and calmly try to recover the first memories after waking. Frequently a goodly portion of the sought for notion is discoverable, but even then care is needed that words to express it shall not be too hastily summoned. The borderline between any two kingdoms requires skilful negotiating.

It will be found that elusive ideas, in these circumstances generally belong to the spiritual sphere, they do not concern material objects like door knockers, dubbin or dress designs. I say *generally*, inasmuch as a design for anything

can hover above consciousness in a most annoying fashion, just as much as the vision of a perfect world that refuses to be recalled.

'But,' argues a reader, have I not read somewhere that literary quality in some associations demands a certain vagueness not to say obscurity, and that, therefore, in poetry at any rate we may have an excess of clarity?' Doubtless this reader is thinking of Mallarmé who told us that to name the fact or idea was to fail, we must only suggest. That brings exaltation—the dream. Henley said of R. L. S. that his clarity left everything beggared of mystery. Well, if new poetry must possess this quality, and evidently it must, the poets will acquiesce, but in the real world other rules prevail. A clear cut originality may leap into being fully dressed, so to speak, and ready for use or display but this does not happen so often as is desired. Frequently we get the half idea, not what we call a brain wave.

* * *

Brain waves? It is not a bad term for new ideas. The human mind has been likened to a broadcasting station, and also to a receiving set. Hence, Upton Sinclair's book on *Mental Radio*. One need not accept all the claims of the Thought World fraternity, but that there is a world of thought in the ether all around us, in which the mentalisms of the million come and go, seems to be more and more likely. If it is true that each material object has its wave length, it is highly probable that thoughts are similarly endowed, and that in subtle ways unknown we are unconsciously engaged in telepathic intercourse.

Perhaps this is why a famous Gifford Lecturer has stated his belief that ideas are the most mysterious things in a mysterious world. They are sudden and beyond prediction. They appear to have a life of their own, independent

of space and time and to come and go at their own good pleasure (1) Should we not say that they come and go according to mental law? We get the ideas for which our brain receiving sets are equipped that is with the required wave length—like unto like The ability to respond to the finer influences of Nature and mind has apparently had no expositor of note to make it plain to us and we must wait until some genius shall come our way Meanwhile we can be busy with the enlargement of our spiritual gifts so that to put it commercially there may be a greatly increased income of ideas This expansion of wealth carries no income tax and from April to April annually you can increase your balance at the Bank of New Ideas without any fear of a form from Somerset House

* * *

The personal qualifications needed for the special kind of mental work we are investigating are stated and amplified in the next chapter but one or two of them seem to call for introductory comment Love comes first I am glad that this word is being rescued from its all too sentimental erotic associations Words can be degraded by overuse and by wilfully perverted suggestions and the word love has not escaped altogether But it is regaining what it lost People are more ready to realise that love is the fulfilling of the law—every law including that which controls the flow of new ideas Its synonym is *interest*, but in the long run there are no synonyms a man must *love* his calling if he is to get the best out of it and out of himself

This is obvious enough but it is one thing to *know* and another thing to *realise* a fact of so intimate a character

(1) *The Human Situation* pp 294-5 By W McNeile Dixon

road to A find a sudden light because unconsciously they have turned in the direction of B. They are men of mind but their minds are like searchlights flicking the beams here and there never continuing long in one stay.



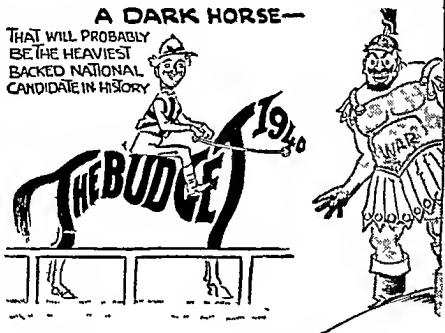
Liberty bends anxious to hear what Mr Welles due home today has to say of his "peace reporting" tour. 'Well. ' she asks in this Paris Sour cartoon.

(1) By kind permission of the *Daily Express* London Mar 28 1910

Souriau in his *Theorie de l'Invention* says that it rarely happens that the ideas we find are precisely those we have been seeking. We find our ideas most often by

digression This is more than doubtful I prefer to answer by concentration—except for the few already referred to

You will rightly expect me to emphasise the importance of imagination It has been termed mind in the spirit of



By permission of the *News of the World* London April 4 1940

adventure. Yes but a *controlled* adventure It knows what it seeks and usually it knows where to find the thing sought for Here is an illustration When Mr Sumner Welles the American Secretary of State returned from his trip to Europe with the biggest possible earful of news

from all the heads of State the Americans were most keenly curious to know what he was thinking. How could that state of mind be represented pictorially? An artist in Paris gave the answer—the Statue of Liberty leaned forward expectantly. It is a fine instance of investing in inanimate object with life.

Should the object be a living animal, a horse for example, the artist's imagination can invest it with purpose far beyond that bestowed by nature. In the illustration here, with he has elected to work in close association with a well known phrase and the Chancellor of the Exchequer is the jockey who rides the 1940 Budget.

* * *

If we take a purely abstract idea like that of resultless effort—actions painstakingly carried out but yielding no benefit—imagination can give the idea embodiment. When the ancients wished to picture hopeless misery, says an old writer, they took exertion without any sense of progress as the type of it. Thus they painted the daughters of Danaë filling up for ever pails without bottoms and Sisyphus without intermission rolling up a high hill his huge round stone and doomed for ever to see it, as it gained the summit, escape from his grasp and roll thundering and smashing down the declivity again.

Presumably, you have not beguiled yourself with the notion that imagination is for artists and poets and writers of critical valuations but not for business men who make and market fish glue or turn out pins and clothes pegs by the million. That notion used to be widely entertained, but a little investigation showed it to be false and Ribot's *Creative Imagination* appears to have killed it dead. An engineer or an advertisement copywriter, or a sales manager,

need imagination every day of their lives. The difference between them and the poet is that while they work mainly in materials, the poet is concerned with thoughts, fancies and feelings—he seeks a spiritual unity. In one sense that is a higher function, because mind and soul are superior to material considerations. We do not live by bread alone.

* * *

The search begins. Where shall we look for new ideas? And how? If I begin by saying that there is observation and observation, you will guess what I mean. Take the question. How many buttons have you on your waistcoat? You don't know? Well, it is not a serious matter after all. Who cares how many? And if there are eight instead of six, or nine instead of five will the earth cease to go round the sun? Of late years the tendency in tutorial institutions has been to urge the observance of unimportant details—in fact, to notice *everything*. This is not intelligent practice—it is wasteful. The attention of the senses should certainly be comprehensive in character—how keenly did Shakespeare observe the world and things—but for evolving new ideas only one kind of observation is worth while—observation *with inference*, like that of Galileo when he watched the swinging lamps in the church of Pisa.

I once saw a newspaper heading to this effect—'Study of Snakes Helps to Produce New Tyre'. The paragraphs that followed told me how closely the first impression of an acute observer had been followed up by investigating the muscular movement which takes place on the underside of a snake in locomotion. Probably the same observer was responsible for the analysis of a camel's foot, the peculiar construction of which allowed the beast to walk on a sandy surface with the same surefootedness as on the hard road. To notice a swinging lamp and to arrive at a great dis-

covery or to become interested in a serpent's locomotion and bring about an improved motor tyre is observation in the act of success. True one can notice comparatively trivial things such as the number of men who leave the last button of their waistcoat unfastened but it is of no particular value to learn that this fad began with Edward VII whose obesity demanded a consideration of that kind.

Here is a bit of business philosophy based on human nature as it is. Under the heading of 'Keeping a Shop' Reginald Morris in *Fair Copy* provides us with the unexpected —

A shopkeeper said shops were funny things to invest in. They wanted understanding. Everything depended on the locality. Also it didn't do to alter shops. A dirty looking shop had to be left as it was especially if the neighbourhood was a poor-class one. A man made a fortune with a shop in Bermondsey selling gammon rashers of bacon. After he had made his money he opened other shops in the latest up-to-date fronts. Then he thought it was time to alter the Bermondsey shop. He had it rebuilt and a new front put in. He lost all his old trade and never got any new.

That is observation leading to a new idea of an unusual kind.

CHAPTER II

HERE ARE THE NEEDED PERSONAL QUALIFICATIONS.

NATURAL ABILITY EDUCATION. CIRCUMSTANCES

IN discussing personal qualifications for producing original ideas, it is advisable to ask three questions

(a) What natural abilities have you? (b) What kind of an education have you had? and (c) Are your circumstances a hindrance or a help? The first question is the most important of the three, and in these days of mental tests, plus experience, the amount of a young person's native talent in any particular direction can be decided without much doubt.

Again, the man who has a good brain and faith in himself, can overcome lack of education and adverse circumstances. Take some instances from the history of scientific discovery. Priestley's environment was not favourable to his ambitions for he was a Unitarian preacher and had to carry out experiments in his none too many leisure hours, at any rate for a considerable period. Faraday, the son of a blacksmith, and apprenticed to a bookbinder, had, so to speak, to clear away vast impedimenta before he could improve his education and give his abilities a real opportunity. Davy, as a surgeon's apprentice, was handicapped in the same way. Linnæus, when a student at Upsala had to live on £8 a year—so the reports have it. Kepler used to cast horoscopes for cash to maintain himself the while he pursued his astronomical enquiries. Edison's pathway to success was not too easy, he, too, experienced "the fell clutch of circumstance." But he persevered and won.

A youth might easily be frightened by the list of personal qualifications demanded for success in physical and chemical research. Such a list was drawn up by Gore. (1) an inherent sensitiveness to particular impressions of similarity and difference (2) an ardent spirit of enquiry and enterprise, (3) a suitable and sufficient knowledge of science, (4) imagination and fertile invention, (5) acute observing faculties, (6) accurate reasoning power, (7) and an aptitude for experiments.

I contend that these are the marks of the well nigh perfect research worker, and that when Faraday entered the laboratory of his friend he did not even approach this state of perfection. However, the young man who is keen learns something new every day, and, while his knowledge grows, his powers expand rapidly. A keen observer of the mind in action claims that "in its unguarded moments the mind is clearer and more reliable than either scientists and logicians allow" (1).

Your circumstances, although not completely under your own control for the time being, are not entirely beyond your influence. You can so arrange your affairs that time is not wasted, and if *place* is the difficulty, because it lacks quiet, you can do something to obviate such a hindrance. Surroundings should be congenial if you are to get the best out of yourself, and if they are at the moment unhelpful, devise a new and better system, thus giving exercise to whatever ingenuity you possess. Here's a chance for new ideas at the very start.

LOOKING AHEAD 1,000 YEARS

Before going into details about the needed personal qualifications I should like to say that while you are very

(1) *Scientists are Human*, p. 189

keen on the subject of new ideas in your own line you may not like new ideas in spheres of a different nature. I believe it is better to favour new ideas everywhere if they are put forward with any show of reason and bear the names of men in authority. For instance here are some notions from Professor A. M. Low's *Our Wonderful World Of To Morrow*. He is looking ahead a thousand years.

Our teeth will have disappeared. Teeth are a sign of low mentality.

A car going 50 miles an hour will be merely crawling.

People will use ear filters by means of which to select desired sounds and to reject others less desirable.

The man of the future will not only be toothless but hairless also.

What are your reactions? I have tested one or two people. The first said Bosh! The second said with a smile O well he's too utterly utter! The third hesitated. A thousand years is a long time. I accept the notions about motor cars and ear filters but I rather think human teeth and hair will take more than ten centuries to abolish. And this third man was at any rate discriminating.

Let us now discuss in detail some of the personal qualifications referred to in the heading of this chapter. They are (1) the power of love (2) a sense of externality i.e. a knowledge of the world (3) ability to concentrate (4) imagination and (5) patience.

LOVE AS A WORD AND A FACT

Love is a tricky word exclaimed a man who had just lost a breach of promise case. He was right also wrong. But there is undoubtedly a blindness in some forms of

love An earnest student in the long ago once said I have such a love for Mr Ruskin that even when I know that what he writes is absurd I do my best not to see it That is blind enough to satisfy anybody

In psychology this word *love* is a bit of a nuisance until it is taken out of its more personal associations and compelled to answer questions about its less sentimental activities Mention love to a miscellaneous group of men and women and their reactions although varied are all of the emotional type Naturally so

But as love is the greatest thing in the world it not only transcends the emotional exchanges of two lovers but penetrates every sphere of which we have knowledge and it has not a little to do with the getting of new ideas Is that a surprise? If so be persuaded at once that there is a close relationship between love and intellect I do not mean that if you want to develop mental acumen you should fall in love and get married although that is by no means a fanciful notion For instance I opened my newspaper one Sunday morning to be confronted by a heading which asserted that

ITS LOVE THAT MAKES THE STARS

Mr Cecil B de Mille film producer is of opinion (the report says) that a star cannot reach the pinnacle of her career without the grand passion and the claim is supported by the statement that Leatrice Joy did not attain the height until she fell in love with John Gilbert and married him She seemed to bloom and blossom and a new radiance showed in her work She went right to the top

To strengthen the claim the names of Miss Estelle Taylor Miss Alice Terry Miss Phyllis Haver and Gary Cooper are added as further instances Love seems to increase the

human qualities said Mr de Mille finally I agree Not for nothing does the old Book say that love is the fulfilling of the law It fulfils all laws the psychological as well as the moral

LOVE UNIFIES KNOWLEDGE

Do you ask how Listen to Rodó —

For one who bears in his heart a great ideal love a thousand trifles of the reality of each hour a thousand light impressions upon his sensibility and his senses which for most men pass without leaving a trace gain the power to awaken new fruitful associations—a suggestive virtue which opens unexpected vistas upon the useful and the beautiful (1)

In plain language love *unifies* An inventor who is planning a new haycutter in which he is mightily interested finds that all the needed facts and ideas for the completion of his mechanism seem to come They do not come at once even when he implores them to come but they come eventually and very often when he is thinking of something else

SEWING MACHINES AND SYMPATHY

If you are still doubtful as to how love can really and truly originate an idea especially say an idea for a mechanical invention take the case of Elias Howe and his sewing machine He got the idea when he sat watching his wife working hard at her needle to help in making both ends meet—for the family was poor What if he could construct a machine that would save his wife from this strain'

(1) *Motives of Proteus* p 278 Introduction by Havelock Ellis

An idea with love behind it is broadest — Calling all similar ideas

He thought and wondered and thought again and again. He succeeded at last after long efforts and disappointments but the first gleam of light illuminating the way to a new concept came from love—he disliked to see his wife slaving at the needle—she was too good for that (1)

LOVE STARTED THE TELEPHONE

Take the case of Alexander Graham Bell. He became interested in deaf people and desired to invent something which would enable them to overcome their infirmity. The nearer he came to success the more eagerly he worked. And then, suddenly, in the midst of this unselfish enterprise he discovered the telephone! His labours for others brought benefits to himself. If you seek to confer a blessing of any kind on other people there appears to be a subtle and mysterious law at work which ultimately creates a situation favourable to yourself. In fact we have been told on excellent authority that to seek the ideal, first of all, causes the other things to be “added.” Even on purely scientific grounds love, as the exercise of a principle, is a good investment, witness these words from Charles Darwin: “Those communities which include the greatest number of the most sympathetic members, would flourish best, and raise the greatest number of offspring” (2).

GIVING- RECEIVING

Besides, the love emotion takes pleasure in *giving* and it is more blessed to give than to receive. You don't believe

(1) Whitehead the philosopher has drawn attention to the case of Ramanujan the great Indian Mathematician of whom it was said that he loved the first hundred integers as if they were personal friends. Warmth of feeling is calculated to produce new insight. I am not surprised that Aristotle called love the architect of the universe not only because it designs and builds but first discovers and creates.

(2) *Descent of Man* Fourth chapter

that? But it is true not only as an elevated feeling in the sphere of ethics but as a factor in the realm of intellect. Listen to Emerson as he writes in *Journal* 36

What a discovery I made one day that the more I spent the more I grew that it was as easy to occupy a large space and do much work as an obscure place and do little and that in the winter in which I communicated all my results to classes I was full of new thoughts

I think it was Carlyle who said Give rovally The man who does not stint his efforts while discharging the duties of his job is the man who usually forges ahead and the man who dispenses his thoughts liberally will find that his mental storehouse is being secretly filled again while he sleeps

Has any biologist investigated the effect of love on the physiologies of the lovers concerned or on the bodies of the men like John Howard who love their fellows in order to redeem them from evils? I don't know but I do know that love causes the intellect to become more acute in analysis and more penetrating in reflection. Why? Because love is *interest in excelsis*—interest in its deepest depths and thru such interest there is no power more helpful in the amassing of knowledge or the promotion of new concepts. This comes about because love gives mental detachment by sinking the self and focusing the attention on the desired object

LOVE FULFILLS ALL LAWS

The best purely psychological explanation of the relation between love and mental fertility is found in Hoffding's *Outlines*(1) wherein he says that *feeling* exercises an attric

(1) *Outlines of Psychology* pp 306-6

tive power, not only over ideas of the same kind as that which originally caused it but also over other ideas which excite similar feelings. By this means the feeling may become a connecting link between ideas of different kinds."

There you have an authoritative statement of the *how* and the *why* and you now know—whatever the nature of your research for new ideas—the one and only primary secret is an interest that amounts to love. Once you possess this you ought to press forward towards success with every hope and confidence. Testimonies are found in unexpected quarters. Yesterday I opened the pages of an oldish book on *Philosophy and Religion* and the author told me that 'great moral discoveries are made not so much by superior intellectual power as by superior interest in the subject matter' (2).

Consider, for a moment, the function of love in religion and as a facility in social relationships. Old statements about religion often contain principles which deeply concern the life of the mind—your mind and mine—all minds. Here is one. I reproduce only the principle. 'Thou shalt love—with all thy heart, and with all thy soul and with all thy mind.' This is called the first law of religion. It is also the first law of psychology—that is for mental health and prosperity. Disobedience of the said law fills the consulting rooms of the psychoanalysts in New York, London and other capital cities. Disobedience also causes mental frustration and failure.

What is the secret of being a good mixer? It is not an explanation to say that a man is made that way, although on the surface it is a passable answer. He is a good mixer because he has a liking for people and this liking will make

(2) *Philosophy and Religion* by H. Rashdall

him a better judge of human nature than is the man who hates folks generally, or is loftily indifferent to them. In all matters that involve *judgment*—such as the likelihood of success in a new popular enterprise, or the right opinion about another man—a true and deep interest in human nature is an indispensable qualification. Bagshot, a skilful commentator on men and affairs acutely remarks that “it is a great part of worldly wisdom to recognise other kinds of cleverness than your own. One of the greatest mistakes you can make is to think a man is stupid because he is not clever in your way (1).” The genuine lover of mankind—like Abraham Lincoln—is prepared to ‘live and let live’, and he possesses also the instinct for sound government. Lincoln was neighbourly in the widest sense and its effects on his thought and action are evident everywhere.

Do you know who wrote these words. ‘Love never wrongs a neighbour’? It was Saul of Tarsus, in the personality of St Paul (Moffatt’s translation of Rom 13. 10). But that meaning is only half the story. The neighbour, in response to interest—and the respect which goes with it—places himself on your side. The world is with you. Is not that what you want?

GENIUS AS INTEREST PLUS

In my talks with men of all nationalities I have found this gospel of love and intellect was not at first acceptable. They could not see it, and they had to be convinced. But the final assembling of evidence did at last overcome their scruples. One of the converting influences was the fact that genius itself is founded in love. Study the careers of Darwin, Newton, Wallace and Edison, to choose only

(1) *Comments of Bagshot* p 128

four and you find that they pursued their aims with all the ardour of lovers. So do successful inventors and men of business. John Wanamaker loved his store with profound affection and this was largely responsible for his commercial acumen as well as for the æsthetic side of his venture for he was an artist and sought beauty as well as profit.

Genius is the ability to grasp what is essential in all things and this ability—so says my authority⁽¹⁾—is the deepened interest, the love of the object, for to none other than genius do the essential qualities show themselves. Goethe held the same conviction and expressed it in terms which are worth recording. He wrote: 'By ill will and hatred a man's observation is limited to the surface of things. Even though these qualities be accompanied by a keen perception. But if the latter goes hand in hand with good will and love, it is able to penetrate into the heart of man and the world.'⁽²⁾

The reader need not trouble much about the word genius. If a man has it, the evidence cannot long be hidden. But he should certainly ask himself whether he has love for anything in the form of a passionate interest. If he has he is certain to make an advance, and he will never be devoid of new ideas. His mind and emotions will be motivated by a stirring curiosity. His every day will be a day of questions but not always of questions and answers. A good thing, too. These delayed answers keep his mind at concert pitch. They prevent a drop in the power of interest.

(1) Türck *The Man of Genius*, p. 456

(2) *Criticisms, Reflections and Maxims*. Tr. by Ronnfeldt

THE GOOD MIXER'S VALUE

Fletcher Durell, in his *Fundamental Sources of Efficiency*, gives a good deal of space to what he calls *externality*. This rather long but useful word means, in substance, worldly wisdom, that is, not only a knowledge of human nature but of the total surroundings in which it disports itself. "The other fellow is no stranger."

To get new ideas it is a great advantage, in every way, to be a good externalist. Let us suppose that on the table before you is the model of a new article. One question about it is 'Will it sell?' Only the man with market knowledge can say. But he must also be well acquainted with men and women, especially the kind of people to whom the new article is expected to appeal.

You, yourself, may be deeply in love with this new thing, and, for that reason, it is wise to be on your guard lest you should form a falsely hopeful opinion of its sales prospects. The one safe guide is an intimate knowledge of what the public wants.

Again, if your new idea, whatever its nature, is to create a demand in England for a certain article which has sold well in America, you will find it necessary to understand the working of the English mind before you lay out or try to get other people to lay out, considerable sums of money in preparation for the campaign. The same conditions are demanded for the sale of a new article in America, one that has done well in England.

A new belt for trousers which has had a boom in U.S.A. will not necessarily boom in Britain, mainly because Britons prefer to use braces or suspenders. Nevertheless, afterwar conditions, which may dispense with waistcoats (vests) might possibly open up a market for the already

successful belt Or it might not You have to make every enquiry before investing your money

HOW OTHER PEOPLE HELP

But, you ask, how does an intimate knowledge of the way people think and feel, and of the world they live in help me to get new ideas? There are several answers to that question Here is the first Ninety five per cent of any kind of success depends on your knowledge of, and sympathy with, other people You need their support, and unless you know their mentality, you do not know how to act More than that you fail to get their response Alfred Adler, the Viennese psychologist of international fame declared that the failure of the individual to adjust himself to the conditions of life "was responsible for many evils, indeed, he continued Life's failures are all examples of lack of interest in others The severe isolationist is not usually in a position to get new ideas—in fact he separates himself from all the sources of suggestion, of friendly communion, and of profitable exchange of opinion

Why do we find engineers producing medical inventions? lawyers becoming responsible for big guns of a type not previously thought possible? and non-mechanical men introducing spinning machines? These men did not spend their time in their own immediate circle They travelled outside it They talked with people everywhere They kept their eyes open and their minds alert Then, one day, some of the facts so gained clicked in the brain and suggested startling developments

LEADERSHIP AND SOUND JUDGMENT

Now for the second answer The old exhortations which we used to hear in the days of our youth contained sound

psychology and therefore sound sense. One was 'Thou shalt love thy neighbour as thyself'. In modern parlance, 'Don't cultivate aversions from people. Be interested. That way lie happiness and success.' Further, it makes other people an essential element of ourselves—in every possible way. We jointly become parts of a great social whole. This is the secret of that superlative *good judgment* which has marked the conduct of leaders in commerce and the professions; they knew human nature because they had a living share in it. Listen: these men were shrewd as well as sympathetic for they knew that by intimacy with other people *they would reap what they had not sown*.

When the daughter of Sir Walter Scott objected to some thing because (she said) 'it was vulgar' her father asked,

Do you know the meaning of the word *vulgar*? It is only *common*—nothing that is common except wickedness, can deserve to be spoken of with contempt. That is the note to strike. As if you said, 'I am a man, nothing human should escape my notice or fail to engage my sympathetic reflection.' The isolationist is a loser all the time.

YOU NEED A CHANGE

Doctors often prescribe a change of air, and of scene, as beneficial for the body. For the mind, too. A psychologist could offer the same counsel to the candidate for new ideas. Hoffding, the Danish psychologist, supported the plea of one of his countrymen for the service of new impressions in the promoting of new thoughts. He compares the human mind thus favoured, with that chemical state which has a tendency to enter into new combinations.

The kind of change is not so important as the change itself. You can feel the thrill of fresh feeling in your

system mental and physical as you visit the English Lakes, or the Catskills or see the moonlight on the desert in Arizona or you may achieve similar results by analysing the life of large cities London Edinburgh New York San Francisco Rome. Actually one need not go so far afield. A brief train journey may take you to the rocks on the seashore or to the foothills barely an hour away—and new ideas begin to take shape because the external scene has provided the senses and the mind with a new atmosphere.

To all readers who mistakenly avoid human contacts and thereby sustain incalculable losses of every kind I would commend these lines from Walt Whitman. I do not agree with his slights on Nature, but I like the warmth of his attitude to man in the mass.

*Keep your splendid silent sun
Keep your woods O Nature, and the quiet
places by the woods
Keep your fields of clover and timothy and
your cornfields and orchards,
Keep the blossoming buckwheat fields where
the Ninth month bees hum
Give me faces and streets—give me these
phantoms incessant and endless along the trottoirs
Let me see new ones every day—let me hold
new ones by the hand every day!
Give me the shores and wharfs heavy—
fringed with black ships!
O such for me! O an intense life, full to
repletion and varied!
People, endless, streaming with strong
voices passions, pageants!*

THE CALL TO REALISM

There is a passage from the old Book which in this connection is of the utmost value. It pays a certain tribute to what might be called a knowledge of things as they are. 'The children of this world are wiser in their generation

than the children of light. As if to say this that you can so abstract yourself from the life of your fellows as to lose touch with the realities of everyday existence consequently the worldly wise to that extent have a wisdom which excels that of the pure idealist. Isn't it so? The remedy is to become a good externalist without forsaking ideal principles. That is one of the roads to the metropolis of new ideas.

CONCENTRATION IS EASY IF ?

There is no real difficulty in knowing what concentration is in itself. It is a state of focused attention in which the whole mind is engaged. It is not a separate faculty like memory or imagination. True the ability to fix the mind on any subject say a chess problem or how to master a smoky chimney can be called a mental power but as such it is no more than the complete use of the mind as a whole.

Mind wandering is failure to place the attention on any one thing except for a moment or two. As a bad mental habit it is due not merely to intellectual dullness or slowness. Many intelligent and quick witted people make a like failure owing to a sort of kink in their minds which unless corrected by mental training will always destroy most of their efficiency as discoverers (1). If you are a mind wanderer unable to concentrate for even a brief period of time you had better go into training at once using the hints offered to you in this section.

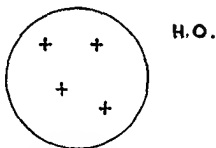
IMMOVABLE ATTENTION?

Again concentrated attention is not necessarily immovable attention like fixing your thoughts on a diamond, a beetle, a Chinese vase or a business proposition and never anything else for the space of half an hour. As a

(1) Lord Passfield's *Methods of Social Study* p. 32

matter of fact such fixedness is impossible, but many people have got it into their heads that concentration is an unchanging mental state. Quite wrong. Real concentration is a free movement of the mind within a chosen and prescribed area.

Let us take such an area. It consists of a problem—how and where to buy a new lawn mower. To settle the matter you have to go into your finances, inspect catalogues, compare competing claims, and make a decision. Here is the diagram—



The prescribed area is marked by a circle, and the four crosses stand for the four items claiming your attention. You may change from money matters to the reputation of a maker of mowers, or you may give your attention to the merits of some bits of mechanism in one of the outfits, but in these changes you would not be mind wandering—you would be concentrating, inasmuch as your whole mind is fixed on the varying aspects of the problem. But if you suddenly veered off to H.O. which is outside the circle, you would be mind wandering indeed. For H.O. is a concert at which you are to sing. The song will demand full consideration later, but not now. It is a kind of mental

sin to give the concert any of the attention which you have avowed belongs to the lawn mower

You need not envy other men their ability to give attention to several matters at the same time Lord Kelvin could dictate one letter write another by hand and carry on a discussion with his assistant all at once (1) This is a special gift

POLITICS CHESS TENNIS

It is instructive to hear what has been said by men worth listening to W E Gladstone used various external methods to assist the powers of attention For instance, he had four desks in his office One for correspondence one for affairs of State one for literary purposes and a private one for his classical and other studies He seems to have believed in atmospheres as essential factors and as developed by associations with place and circumstance

Alekhine world's chess champion could tell us a great deal about concentration but so far as I know he has not yet done so As a Russian who did not accept Bolshevism he was arrested and thrown into jail Trotsky came to see him They played a game together Alekhine concentrated to such effect that he completely outclassed Trotsky—a rather bold move when it is remembered that the defeated man had then the power of life and death Alekhine in later years won the great prize of Master-Player but he grew careless and lost it only to regain it by closer concentration in which no smoking and no alcohol played a part

Take sport Fred Perry avers that concentration needs as much acquiring as a forehand drive or a powerful smash

(1) *The Inventor* p 35 By H Stafford Hatfield Ph D

The champion of the future must have mental drill"

Golf has been said to be 80% imagination. Maybe, but one has to fix the attention on the job in hand in order to get the imagination into action. Moreover, experience teaches that in good golf you think of one thing at a time. That calls for the whole mind.

INTEREST AND THE SECRET

Has concentration a secret? It has quite a number of secrets, so called. But the greatest of them is *interest* (1). Just love your subject with an ardent affection and you will be able to focus your attention on it at any time. Inventors and research workers seldom have any difficulties with failure of concentration, often the 24 hour day is not long enough to do all they have planned to do.

Mark this: it is not concentration, as such, which brings results. All it does is to enable you to get the best out of your abilities and your knowledge. Great ability makes for concentration, but concentration in itself does not make great ability even though mental ability is improved. If your powers are slender, you cannot expect to equal the output of men and women who are talented, and who have had exceptional opportunities. But you can realise your programme if it is not ambitious beyond your capabilities, for it must be admitted that in quite a number of cases moderate powers plus concentration have done better work than talent that is not so well organised. So high an authority as the late Dr James Ward said that very inferior talents combined with decision and steadiness of purpose continually turned out superior in the race for life" (1).

(1) See the present writer's *Secret of Concentration* (Harper)

(1) *Psychology Applied to Education* p. 8

The truth would seem to be this—that focused attention can do many things but not everything. Concentration of effort will not make you a mathematician if you have no gift whatever in that direction but it will enable you to understand the processes far better than if you gave them butterfly attention. In general work hopefully for love and concentration can take you a long way. Such is the nature of the world of thought that focused attention acts like a magnet attracting other facts and ideas similar to the one which is in the mind at the moment.

THE Q AND A METHOD

Concentration as already intimated has its *methods*. One of them is the Q and A—that is question and answer. The answers may not be forthcoming immediately but that is not the point. The point is to be able to *ask* good questions and these usually come from close reflection. They concern the subject both in its parts and as a whole. And when you have pondered for long periods without result you may be conscious of irritability & mood which occasionally causes a man to form rash decisions such as an attempt to *force* the mind to a conclusion. Far better is it to turn to another subject and *wait*. Platt and Baker in their investigations found that scientists got their best ideas when the mind was not consciously directed to the problem. This tallies with the view of Souriau previously referred to namely that it rarely happens that the ideas we find are precisely those we have been seeking.

We find our ideas most often by digression. I would not say most often but *sometimes*. If the fact were as stated by Souriau one might as well not concentrate at all but allow the mind to wander at its own sweet will so long as it kept somewhere near the subject under con-

sideration Obviously, this would be a sort of controlled mind wandering, and as such it is bound to be inferior to efficient concentration

WILLIAM JAMES ON RESULTS

Once more in what way does concentration of mind promote the getting of new ideas? I like William James's answer to this question better than any other He says that among the advantages are these better perception, better powers of distinguishing, and better memory (1) Possibly these declarations do not tell the reader exactly what he wants to know, and in words to which he is accustomed I venture, therefore, on this paraphrase that concentration enables a man to see farther into what looks like a brick wall, to see more things than many see, to "spot" differences among a lot of similarities, to remember what he sees, and by means of this combination of activities, to get new concepts, *i.e.* new ideas Power to concentrate the mind is truly a worthwhile ability.

You have seen searchlights probe the sky at night time They pause for a few seconds to inspect a cloud and then move hither and thither as they look intently for enemy planes Some men's minds act in that way There is intense concentration for a brief moment, then a movement elsewhere, perhaps to an entirely different subject Nobody will deny that some good results can accrue from this kind of attention, but how much better the outcome would be with an observation that is organised

YOU HAVE AN IMAGINATION—OF SORTS

When you hear the word *imagination* mentioned, what do you think of? A lot of people either think of poetry

(1) *Principles of Psychology*, Vol. 1, p. 421

or of being ill. Others think of calf love, and a few contrast imagination with reality. Shakespeare's words come to mind—those about the lunatic, the lover and the poet being 'of imagination all compact'. He did not intend it to be a scientific statement but there was a penetrating truth in it.

Throughout its long history the word imagination has gathered round it a number of false impressions, among which is this—that only poets can be truly imaginative. Ribot, in his *Creative Imagination* has shown that there is a real exercise of this power in the mind of every man, more or less, the business magnate who controls large enterprises, and the small man who supplies the grocery needs of a tiny village, the carpenter who builds a staircase round a corner, and the farmer who arranges rotation of crops, must fall back on imagination if they are to succeed. An inventor needs imagination just as much as a Poet Laureate who desires to set forth the miracle of Dunkirk.

For this reason it might be desirable to glance at the way in which imagination works, but we must forego that undertaking. The subject is as vast as it is entertaining, but our present aim is practical only. Still, it would be possible to give some indication of the mind at work in this connection.

HOW IMAGINATION HANDLES FACTS

A great many years ago Dr Alfred Cook neatly codified a few of the modes which imagination used in its handling of facts.

- (a) *Impossible degree* comes first. When Jupiter is in Greece he has eyes which can see events that take place in Italy.

- (b) Then there comes *action that is unnaturally slow or fast*. You have only to recall your reading of the *Arabian Nights* and the story of Aladdin's magic lamp.
- (c) Again imagination makes *size infinitely small or large*. Think of Swift's Lilliputians and Brobdingnagians.
- (d) *Objects and living things are invested with properties they could not possess*. Thus Aesop's *Fables* give an impossible mentality to animals.
- (e) *Causes and effects are disarranged*, as in the story of Rip Van Winkle.
- (f) *Impossibles are united*, as in the case of the Sphinx which embodies several forms of animal life.

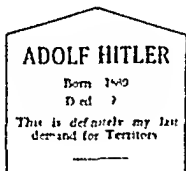
These are mainly connected with literature. An inventor's imagination works on different lines. He has to discover ways and means for achieving certain ends as when Stephenson sought a particular method of using steam for propulsion.

Fortunately it is not necessary to understand all the secrets of imagination in order to be able to produce new ideas any more than it is necessary to know the chemistry of digestion before you can digest a beef steak.

THE ORIGIN OF NEW IDEAS

How do we get ideas? In many ways of course but he would be a presumptuous fellow who pretended that he knew the secrets of every one. Nevertheless it is fascinating to trace idea origins even though the ideas themselves may not be of outstanding importance. One morning I read in the newspaper that Hitler in a speech had made a declaration on foreign policy. He said: "This is definitely

my last territorial demand. That sentiment seemed familiar somehow, and I promptly called him a liar. I got out the atlas and began to study Europe in view of Nazi activities everywhere. I felt sure that Hitler sought world domination, and that he had not yet made his last territorial demand. Just then a funeral passed my



Management, has taken this very step. He writes —

Make a list of twenty or more important articles used in your business, writing the names as they occur to you, without seeking any special order but numbering from one to twenty or upward to the end of your list. Then mentally study No. 1 and No. 2. What are the relations between them? How does one affect the other? In what way can the relations be improved?

Similarly study No. 1 and each number on your list, then No. 2 with each following number, and so on.

A noted psychologist (Dr. Limer Gates) claims by this method to have thought of inventions which have brought him many thousands of dollars.

But there is another aspect to be considered. Young men, fired with enthusiasm, and duly impressed by the dramatic thrills of success in imaginative enterprises are apt to forget that there is often a fearful amount of drudgery to be gone through hopefully and patiently. In carrying out the comparisons and the enquiries just suggested there will be periods of weariness, charged sometimes with questions like 'What's the use?' or inducing remarks like, 'Piffle!' and 'Rot!' But salvation and success come only to those who endure to the end. Besides, why should a brilliant result be *easy*? Darwin's experiments on earth worms covered twenty nine years.

PROF LAIRD'S COUNSEL

Professor Donald A. Laird's counsel on *Six Ways To Get Ideas* is very sound, but it calls for the industrious effort to which I have just referred. He writes —(1)

(1) In *Your Life* (New York) Reproduced in the *Readers Digest*

- 1 Search for important general rules and put them to work
- 2 Criticise your old ideas
- 3 Devise improvements in some daily routine such as dressing and then try to figure out how similar changes could apply in your daily work
- 4 Seek as many friends as possible whose field of work is different from your own
- 5 Learn to *direct* your day dreaming in a Daily Rambling Thought Hour relaxation helps inductive thought
- 5 Learn to *direct* your day dreaming in a Daily own business but learn something about the other fellows too

PICTURES OF IMAGINATION AT WORK

In *The Literature of Business* edited by Professors Saunders and Creek there is an abundance of reference to this subject including an article by the present writer on *The Use of Imagination in Business*. Robert R. Updegraff has contributed a useful chapter on Imagination in Selling. His first instance deals with a new idea which consisted of the simple process of sawing up shoes in the front window of a shoe store in Boston. The buzz saw went Zing and a new pair of shoes like those sold in the store was sharply cut in two and held up to the observers' eyes. Good materials, said the crowd. Then there was another Zing and a pair of shoes from a competing firm was displayed. Not so good—we can see they're not. Sawing shoes became a city sight and of course the shoe,

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sawers reaped a harvest—all over the country. Expensive? Maybe. But the crowd rightly reasoned that a firm which would dare such expensive advertising must be very sure of the quality of its goods. They *were* sure. And the public said, 'We'll buy here.' Naturally and inevitably.

A COPY WRITER'S ORIGINALITY

All originality does not lead to inventions of a technical or practical kind, so let us glance at imagination as it functions in other fields of action.

We are not thinking of poetry and painting or any other of the fine arts, but of those departments of our life in which imagination has full scope, although at first sight we might not think so. There is imagination, for instance, in Shelley's lines on the lark, but there is also imagination in the design of a book cover, or the dressing of a window display. Admittedly, the imaginative function of the poet has a significance which is higher than that of everyday utilities, indeed, we expect a quality in all contributions to the ideal which is bound to be absent from articles that more or less serve our real needs. Hence, in the pages immediately following we have offered some instances of imagination at work on different levels.

Some advertising agent in London asked his artist and copy writer to draw up an advertisement for Charles Chaplin's *Modern Times*. Probably a good many suggestions presented themselves but the one on page 67 was finally chosen (1).

(1) It was sent to the present writer without any indication of the newspaper in which it appeared thus preventing me from making a suitable acknowledgment.



Her's
Ideal

Charlie
Chaplin

MODERN
TIMES

From 10.30 a.m. to
11.30 a.m. 1,000 seats at 1/6

Also
"MICKEY'S POLO TEAM" (U)

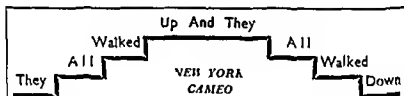
TIVOLI

GAUMONT-BRITISH THEATRE

NEWS IMAGINATIVELY HANDLED

Very cleverly the mechanisms of the picture itself were used to suggest Chaplin's features indeed with only seven pieces the artist has managed to convey the face and to give it a distinct and characteristic impression

Take a different case A reporter in New York is writing the account of a Sunday morning failure of the elevator service due to the walk out of 16 000 operators Most of the people lived twenty or thirty stories above street level and had to walk up then walk down again He wondered whether it was possible to accentuate this fearful stair-climbing and descending by a simple diagram He got his idea and headed his news paragraphs thus —



FASHIONABLE New Yorkers living on wealthy Westside returned from church yesterday to find that 16 000 lift operators had walked out while they were at worship

To reach their homes—most of them twenty and thirty storeys above street level—they had to walk up a corresponding number of flights of stairs

The liftmen are demanding more pay and shorter hours

It was both simple and effective

MICE AND MENINGITIS

It is always interesting to discover how certain investigators get the notions which caused them to begin a systematic enquiry. Here is one instance from the medical world. A man of 46 was admitted to a London Hospital suffering it was believed from influenza. As a matter of fact he had meningitis. The doctors studied his case closely and they found that he had a few days previously cleaned out a shed heavily overrun with mice. The question then arose: had mice anything to do with causing the disease? It did not sound possible or probable—at first. In fact it was calculated to raise a sceptical smile.

But they resolved to experiment. They found that fluid removed from the patient's spine killed the mice into which it was injected. Surprise! They were now on the track of a discovery. More experiments followed with both humans and animals as subjects. The final results have proved that mice are the cause of meningitis, a disease which has ravaged seaports, ships, army barracks and schools for nearly a century.

RUST: DEBTS REBUILT CITIES

If we may judge from a report in *The People* (London) a certain plater called Harry Webb is to make a fortune out of his discovery of a way to abolish rust. America it is said has offered him £3 000 000 for his formula and rights. The National Physical Laboratory conducted a series of tests for three weeks on steel bars—equal to 42 years of actual wear—yet no signs of rust could be traced.

How did he get the idea? From his long experience as a plater and by addressing penetrating enquiries into that experience asking Why this? and Why that? His father

and his grandfather were platers before him consequently the inner state of metals and their surfaces would appear to have been as familiar and intimate as his own body.

There is very little in life which cannot be handled imaginatively if needs be. For instance a photographer had a large number of debts on his books debts that were in most cases owing by people who could well afford to discharge their obligations. So at last he devised a plan of action. Outside the shop he put a large show case containing twenty-four cabinet photographs with their backs to the street. The caption underneath read —

The above are the photographs of 24 prominent citizens of this town. Unless the amounts owing are paid by the first prox the photographs will be faced to the street.

The photographer got his money immediately but he lost most of his customers (1).

Architects with imagination are hard at work on the after-war problem of bombed cities which in many parts need rebuilding. Should advantage be taken of this abnormal situation, arising out of war damage to construct a London on vastly improved lines? Already schemes embodying roof air ports air-conditioned pavements new traffic relief roads shopping streets two stories up parking places below bomb proof basements numerous indoor recreational centres together with many other modern suggestions are being discussed. One wonders what the new London the new Coventry and the new Plymouth will be like when the best imaginations have had their way.

(1) *London Daily Telegraph & Morning Post* Sept. 1937

EXERCISING IMAGINATION

One of the easiest and most natural methods of giving the imagination a little exercise is by using the "If this then what?" type of question. People living in war areas had to say "If my business and my house are bombed out what is my plan of action?" Usually they did not wait for the bombs. They planned before the bombers came. But that bit of planning was a tense affair and imagination had a busy time of it—at first. Later it was all preparative action.

The "If" series embraces all kinds of enquiries and you can add your own queries to the list.

THE "WHAT WOULD YOU DO?" QUESTIONS

- (1) If the totally unexpected happens and you found yourself out of a job—what would be your first step?
- (2) If the corporation in which you had invested your funds became insolvent what could you do to save something out of the wreck?
- (3) If Saul of Tarsus had been talked out of going to Damascus what would have happened to Christianity?
- (4) If Chung Kuo Shek had not resisted Japan for six years (up to 1943) what would now be the condition of Middle and Eastern Asia?
- (5) If you were seized by detectives and charged with a grave crime? or
- (6) If you found yourself in a distant city without funds of any sort what would you do?

Further and more technical efforts can be stimulated by obtaining and using a List of Needed Inventions. Select a comparatively simple need and try to imagine a method of supplying it. One of the easiest ways to begin is to apply your wits to the production of a plan for some house



Look, George!

hold utensils. The advantage lies in being able to deal with the thing from every point of view; you do not have to journey here and there and buy this and that to the same extent as in more ambitious inventions. You will not hesitate to draw up a careful plan. It will help you in every way.

There is further scope in such exercises as that given below. The *Sunday Dispatch* (London) published this animal picture with a comment consisting of two words intended to indicate the remark of one of the dogs to the other. What remark would you put into the mouth of the dog on the right hand judging from his expression and his action?

TEST YOUR IMAGINATION ON THESE PROBLEMS

(1) When Hugh Massingham wrote a book on how to discover the Masses and how to get to know them the question arose as to the title he should use. Getting to know the Masses would have been too bare and bald to attract attention. Suddenly he recalled his thoughts at the start of his enterprise and how he had decided that he could not go slumming in a top hat and wearing spats. Nor could he wear a well-tailored suit. These reflections gave him the clue. Can you guess the title from this hint?

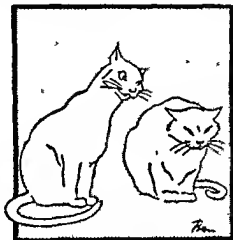
Put on your thinking cap. See what you can do. Invent a title of some sort. Then look on page 78 for the actual title chosen by Mr. Massingham.

(2) You have a little niece five years of age and not finding the kind of toy you wanted for her you decide to make a toy. How would you set about it?

(3) If you like history here is an Exercise in arranging new possibilities. Alfred Noyes asks: What if Cleopatra's nose had been an inch shorter? What if Napoleon had been feeling better on the morning of Waterloo?

(4) If you were asked to explain the picture of the two cats, and the "cackle" below what would you say? (See p. —)

(5) Professor Hans von Ventig claims that four o'clock in the daytime is the hour for domestic catastrophes, also the hour at which all great revolutions have started



“If I were you I’d demand a blood test.”

How would you deal with this claim, whether you agree or disagree?

(6) If you think that imagination is a flimsy faculty try to solve the following problem.

A is a man who spends £5 at a race meeting

B spends £5 at a missionary meeting.

C spends £5 on welfare work in a down town district.

D spends £5—a first payment—in trying to reverse

the will of his old aunt who has left her money in trust for her parrot

Estimate, if you can, the comparative value of these four actions

Lastly, I would draw attention to the method of developing imagination used by Dr E E Slosson and Dr June Downey in their volume entitled *Plots and Personalities A new method of Testing and Training the Creative Imagination*. The book is now over twenty years old, but it is still the best of its kind. The authors take a "Personal" like this from, say, the *London Times* —

Let it be known to the ladies (?) with ugly lap-dog in Haymarket, 11 20, Dec 1st, that the mere man through being entangled in Marcus's lead, causing the "little dear" pain, got home safely, with the aid of some pins kindly given him by some of their better bred fellow creatures

The idea is to imagine (1) the characters of the incident, (2) the events referred to, then (3) to write a story in which these inventions of the mind shall be dramatically revealed. The more one gets away from obvious notions (like a waspish dialogue when the lead becomes entangled) the better it will be for writer, editor, and reader.

"But we are not all of us literary aspirants," says the reader who is thinking out a new mucilage. Agreed. And yet the imagination is the same mental power whatever the use to which it may be put — and although facility in plotting "Personals" may not directly improve your imagination for research work, it will do so *indirectly*, by increasing speed of action, and by showing how in the long run all imaginative efforts are one.

SPEED VERSUS PATIENCE

"Patience?" you ask. Are we going to have a moral lecture on the old virtue that cuts no ice to-day? I can't

say as to the lecture but I will say this to-day as always before, patience has enabled men of science of art and of commerce, to perform wonders. Patience is an old and an exceedingly familiar virtue, but if we are to dispense with it on account of its age we might also try to dispense with such old things as calendars which are still doing yeoman service and which no cynicism can set aside. This condemnation of everything that is old is too often an affectation.

The kind of patience required for evolving new ideas is what might be called intelligent patience, not a dull, apathetic, or donkey like patience which stays put for no other reason than that it has been 'put'. A patient fellow is a man of cheerful confidence. He has faith in himself in his aims and in his plans, and because of this faith he can afford to wait. The evidence of things not seen is sufficiently strong to make endurance comparatively easy.

A THIRTEEN YEAR JOB

Dr W D Wright, at the Imperial College of Science, South Kensington, London, is a specialist in colour vision and for thirteen years he has worked on the problem of colour blindness. Manifestly, he had a great store of patience—not the sullen feeling of 'Well, I've got to stick it,' but the confident hopeful attitude of 'It will all come right in due time.'

Speaking of one Dr Wright reminds me of another man of the same name—Dr Joseph Wright, who began life as a donkey boy in a quarry and ended his career as one of the world's greatest philologists. Patience? He had tons of it. He once said, 'I have never been depressed in my life,' a remark which is on the lines of that by Henry Ford who claimed that he had never been discouraged.

A horticultural specialist wanted to develop a new daffodil. It takes four years to raise a daffodil from seed

and bring it to the flowering stage and in the case of the krakator species ten years must elapse before four bulbs will increase to one hundred. Patience? Of course. But don't forget the price \$5 000 00 a bulb!

PATIENCE AS AN INGREDIENT OF SUCCESS

It is just as well that the moral element should be given its right place at the outset for while some discoveries or inventions or productions may not take up a great deal of time others may need the toil of years. A young historian once asked Henry Thomas Buckle the author of the *History of Civilization* to map out the lines of research for a new book. This was done and then came the further question. How much time will the job take—that is to finish it? Oh, replied Buckle airily, about ten or twelve years. To begin and continue such a programme calls for more than knowledge there must be will and perseverance—all that we have summed up in the word patience.

Ruskin went so far as to say that on the whole it is patience that makes the final difference between those who succeed or fail. All the greatest people have it in an infinite degree, he said, and among the less the patient weak one always conquers the impatient strong. There is a touch of exaggeration here. It is a pity that a value cannot be stated without being either overstated or understated.

I have never recognised this virtue in Arnold's line which speaks of

Sid patience too near neighbour to despair

The sort of patience I have seen quite often can work and wait without agonizing indeed it is for the most part cheerful and confident. I know that there is a kind of dull patience as industrious as it is unintelligent which will allow a man to continue work month after month on

a perfectly hopeless proposition. This is not patience at all—it is self-deception. Group Captain Whittle worked for many years at his jet propulsion mechanism before he got it perfected.

BESSEMER·McCORMICK·NEWTON

On the other hand, I do not agree that patience is a 'humble' virtue—something that everybody can develop anywhere, at any time. It is a quality which, doubtless has simple moral elements, but, essentially, it is the outcome of vision and intelligence. That is why Bessemer could wait for long years before his process was valued on its merits, and when that time did arrive he received £27 000 in one month from the sale of licences. Then think of the patient McCormick, of Harvester fame. At the end of ten years he had sold only seven of his reapers. But there was nothing blind in his endurance. He *knew* because he *saw*.

Reference to the methods of men of distinction is always instructive if not reassuring. Newton said, 'I keep the subject constantly before me, and wait until the dawns open by little and little into a full light.' This holds good for any kind of investigation, the aim of which is to evolve a new idea. Newton sought and found fluxions but the seeker after a new weed killer, or a new anthracite stove, could seek and find in the same manner.

Patience, like God, is no respecter of persons. The bottled weed killer may be a very humble affair when contrasted with a great mathematical discovery, but patience is prepared to work as hard for the modest inventor as for the greatest genius in the world. Patience finds time and opportunity for comparing one thing with another, for showing differences as well as similarities for pointing out features which have been overlooked, and for those tests without which there can be no certainty.

Title of Massingham book: HE TOOK OFF HIS TIE

CHAPTER III

WHERE TO LOOK FOR NEW IDEAS.

LOOKING AND . . SEEING?

WHERE to look?
Everywhere There is no sphere where new ideas are impossible

But there are some in which you are more likely to be successful than in others

One is the sphere in which your deepest interest lies, whether a trade or a profession, mechanics or art, advertising, shipping, or what not

The primary mental condition in all research is what is known as the emotional drive that is the new name for enthusiasm—a term which seems to have almost dropped out of use

When this interest is quite intense there is every reason to encourage its development. Even lack of education need not be considered an insuperable bar, for there have been cases in which talent for mechanics, engineering, science, and even art, has not been accompanied by marked general intelligence. "It is not a matter of intelligence," says Dr Stafford Hatfield "for a youngster, by no means bright, will often manipulate mechanisms, or wireless, with much greater skill and facility than his more intelligent elder brother" (1)

Generally speaking, therefore, the best chance of becoming a new idea producer, lies in that region of enterprise you know best, indeed, it could not be otherwise. If

(1) *The Inventor and His World*, p. 13

you know the world of electric heating and lighting and if you are quite ignorant about the gear for deep sea diving, it is obvious that you will shine in the light and not under the waves. It is also clear that you must have a plentiful supply of enthusiasm. You'll need it.

TWO SOURCES EXTERNAL AND INTERNAL.

There are two main sources of originality—the external world of fact, and the internal world of mind. In a very real sense they are one, but there is an advantage in considering them separately. If the reader has been so bold as to conceive a plan for making a newer and cheaper artificial rubber, and is held up by an unexpected difficulty, he will find that he is as busy with the world of matter as he is with the mental powers of observation and reflection, and in the conducting of experiments he is not conscious of any dividing line between mind and matter. Both work together towards discovery. Nevertheless there are border lines where one section of existence ends and another begins.

Natural gas and human nature form part of the great world, yet it is just as well to mark off the division between the two when Nature and human nature are being discussed as sources of ideas—and destiny. I add that last word because I recall a story about Whistler, the artist. When he was a candidate for a cadetship at West Point, one oral question he had to answer was 'What is silicon?' He answered, "A gas". He failed. In after years he mused to this effect: 'If silicon had been a gas, I should now have been a major general'!

If you or I had been in Whistler's place, such a witty idea might never have occurred to us. And why not? Because, in all probability, our minds are lacking in that easy externality to which reference has already been made.

The material connected with a projected new idea is visible. The mind that thinks and plans is invisible. Yet they are one and they work together with one end in view, *i.e.* success.

SEEK—AND FIND

In closer detail the visible scene may be divided up in this way: new ideas are found (a) in the subject of your special interest (b) in what you see and hear as you go about—and this includes conversations and the Radio (c) in your reading of newspapers, books and magazines.

No one will imagine that these sources supply brand new suggestions ready for action: they are arenas in which such suggestions are more likely to be found than elsewhere. But, of course, this fact does not abolish the need for search. The best discoveries are usually those which lie just beneath the surface. True, a fine idea may come like a flash, seemingly without effort.

*Think you mid this mighty sum
Of things for ever speaking,
That nothing of itself will come
And we must still be seeking?*

Wordsworth rebuked our laborious search, and so far he is right. Nevertheless experience tells us that although noble inspirations may come to a poet on the mountain path, another man who wants an inspiration for a new tea-kettle will have to work for it—and work hard. Ideas for improving domestic utensils are on a plane quite different from that on which the poet exercises flights of imagination and fancy.

Did you ever hear the story of the Finsen light? If not, you will be interested in a brief account of it. Finsen, the celebrated light cure specialist, was one summer's day looking out of his study window. He saw a cat asleep on the roof of a shed stretching itself and luxuriating in the sun. The sun's shadow deepened and overtook the cat, whereupon the tabby arose and went farther into the sun light and warmth. Finsen suddenly got an idea—the benefit of light and heat together. It became the starting point of his famous light and heat cure. The sun, the cat, the shade—those are the raw materials, so to speak, the essence of the whole matter is found in Finsen's enquiring and reflective mind. Without that the external scene could not have produced the merest glimmer of a notion about the curative effect of light and heat.

WHAT NEWSPAPERS OFFER

Up to now I have been referring to what might be called the general facts of our surroundings as sources of new ideas. Let us now look a little more closely into facts.

You can learn a great deal from newspapers and books. I put newspapers first. In fact, I have a very high opinion of the educational value of a good morning paper, properly read—and digested. There is often much that does not meet the eye at first glance. Shoot a few questions and you'll get a surprise. A little reflection is revealing. But my point is this, that your morning newspaper is really a text book of human nature in action—what moves people, what drives them mad, what causes them to rebel, what inspires them to finer issues. Things are not always what they seem' and your reading and reflection enable you to arrive at the *reality* as distinct from surface *appearances*.

In a morning newspaper there are about twenty seven different departments of what may be called knowledge. Here is a list —

1	General News	14	Law Reports
2	Politics	15	Science
3	Persons	16	Art
4	Finance	17	Music
5	Sports and Pastimes	18	Drama
6	Markets and Prices	19	Speculative Thought
7	Human Nature in Action	20	Human life stories
8	Real Estate	21	Education
9	Fashions	22	Weather
10	Biography	23	Racing
11	Literature	24	Correspondence
12	Editorials	25	Geography
13	Society Matters	26	History
	27	Advertisements	

You would value your morning newspaper more highly if you realised its intrinsic worth to you as a reader. Few people truly understand the stupendous cost of gathering and sifting news items from all quarters of the world, or the care and the skill and I might add the scholarship exercised by members of the editorial staff. A good morning newspaper is an encyclopædia of planetary events published every twenty four hours. Read your copy intelligently, and you will never lack the possibility of fertile suggestions, that is if you use an enquiring mind.

THE MAGAZINE MARKET

But the newspaper is not the only source in the shape of printed matter.

Watch the coming of new ideas as given in technical and other journals which report progress. You don't watch merely to get information. You watch because the new idea may have direct or indirect connection with your own activities. And you also watch events because you may get a brain wave of your own from the disclosures made.

Examples? There are scores. Here is one which you may have seen already. It concerns air conditioning which means in popular language making cold air warm and warm air cold making moist air dry and dry air moist also cleaning the air and if necessary putting it into motion. An enterprising writer⁽¹⁾ has taken the trouble to answer the questions Who will lose? and Who will gain? by air conditioning. He has been watching new ideas first to estimate them then to show how they give rise to effects which in turn beget other new ideas.

As contrasted with the gainers the losers may be compelled to branch out in new directions if they are to compensate for their loss. So the writer places losses and gains side by side.

WHO WILL LOSE?	WHO WILL GAIN?
¶ Drug manufacturers who rely on colds sore throats etc	¶ Electrical equipment companies a market estimated at \$1 000 000 000
¶ Cosmetic companies when dry skin and scalp troubles are minimized	¶ Sheet steel tin plate and copper manufacturers—makers of metal for ducts
¶ Screen manufacturers since windows will stay closed	¶ Tinnerns and plumbers who install the equipment
¶ Makers of room and ceiling fans	¶ Companies making automatic controls
¶ Manufacturers of vacuum cleaners—no dust through windows	¶ Manufacturers of weather stripping and of special insulated sash and windows
¶ Drapery and rug companies—less damage from dust	¶ Chemical companies making refrigerants
¶ Railroads due to less travel for seasonal comfort	¶ Utility companies who will sell the power
¶ Winter and summer resorts when people can be comfortable the year round in air conditioned homes	¶ All building industries

(1) Henry Doyle in *Forbes* for Dec 1 1932 as quoted in *The Readers Digest* Feb 1933

Manifestly, if you shut yourself away from the earliest news of modern movements, and never look at publications which describe the course of invention in particular spheres you are likely to be left behind.

To adapt an old saying, 'With all thy getting get INFORMATION,' and get the *meaning* of it. New ideas will soon be flashing in

NEW IDEAS FROM BOOKS

Can one obtain new ideas from reading books? Yes if you have a mind that can "see." Take novels, for instance. A novel is a picture of human nature as seen in chosen circumstances—a historical or a modern setting. It may tell us about a cracker family near Haines City in Florida, or about a man on the make, as in Wells' *Tono Bungay*, or it may depict life as it is lived in Honolulu. The educative value of fiction is not often given a place in plans for betterment. Fiction is just fiction—a narrative art which supplies entertainment. Yet a cunning novel can set forth the play and interplay of human nature in a manner which is not only lively but calculated to supply working hints for the less sophisticated. It may tell the story of some industry in which you are interested, throwing side lights on its conditions and possibilities which cannot fail to be of more service to you than the other details, such as the divorce of the hero and heroine on the grounds that the husband on retiring compelled his spouse to move over to the cold side of the bed, yielding the warmer side to *him*. What a life!

I open a book in search of suggestions and find the following declared 'Wants.' Read them through, not too critically, for reasons I shall disclose in a moment.

- (1) Better candles, (2) Improved coffee machinery,
- (3) New methods of bleaching linen (4) Simpler methods

of refining vegetable oils (5) Required a substitute for gutta percha (6) Also a perfectly colourless Copal varnish (7) An improved delivery wagon with lower centre of gravity, (8) An elastic material for tubing and for conveying gas, (9) Method for producing a lustrous wool, (10) A new means of producing designs in woven fabrics

There are many more but these will suffice. They are very old suggestions as you will have suspected from the phraseology. They date back to 1852, and were reproduced by E. T. Freedy in his *One Thousand Chances to Make Money*, published in Boston, Mass., about 1859.

'BRAINS INVITED'

Modern publications contain, now and again, lists of 'Wants or Needed Inventions,' and they are always interesting in themselves, also as value in indicating the directions in which efforts that are successful will bring in the money, but it should not be forgotten that thousands of people read and study such lists, and that they decide to work on this or that suggestion, with the inevitable result that they set up a system of intense competitive effort.

There was a list in *Parade* (March, 1939) a London Reader's Digest but the writer was Dr. D. A. Laird, who was contributing to *Your Life*. Here is a selection —

- (1) What will enable us to see through fog?
- (2) How can pavements be made easier for our feet?
- (3) Can we make shade trees grow faster?
- (4) How can car parking be simplified?
- (5) Why does not paint last longer?
- (6) Why could not underwear and stockings be made of paper?
- (7) What new kinds of musical instruments could be devised?

(8) Why not rustless iron?

But do not tie up your energies to a list, or spreadeagle your efforts in half a dozen directions. Above all, make a brief list of your own for the sake of developing your originality, and for the chance of alighting on one truly serviceable idea.

A DISCOURSE ON LOOKING

I now desire to stress the importance of *looking*, or, as it is usually called *observation*. It is both physical and mental. The eye and the mind work together in combination.

We may see a thing a thousand, thousand times and yet be unable to say what its details are in their completeness. How many times has the average grown up American seen and handled a dollar note? or the average Briton seen and handled a ten shilling note? And can they tell the world how many times the *one* is in words? and in figures? and can they repeat the reading matter? also outline the design? Tests have been made, with the results not too cheering for acute unconscious observation.

Yet this kind of looking can easily be overvalued. Is a man less gifted as a far sighted designer if he happens not to know exactly what is printed on the paper money of his country? Is he a fool just because, right off, he cannot say how many buttons he has on his overcoat? Obviously, there are facts that are important and not important and it is best not to confuse the two. The hairs on our heads are said to be numbered, but it is not a matter of life or death to be ignorant of the figure.

Consciously directed observation has a different story to tell. All the glories of scientific discovery, and of com

mercial invention are due in a large measure to the eagle eye. And yet we are always being astonished at our short comings.

There was a time when Insurance Companies were certain that no new kind of policy could be devised. All possible situations had been covered—so it was imagined. Then one morning a bright young man came forward with a new idea—it was to insure against loss due to compulsory service on a jury. One would have thought that during the intensive thinking of years somebody perhaps an insurance broker would have suggested this kind of policy in self defence for jury service can be devastating in time and expense.

THE FIRST LOOK.

I am a great believer in what Emerson called the first spontaneous look at phenomena whether persons or things or events. The reason is this: that if you have any originality in you it is likely to come out when you take an unspoiled glance at a fact. By unspoiled I mean that you form your own uninfluenced opinion. Let us suppose that you visit a local display of pictures with a friend and the friend says (as you both gaze at a bit of modern art)

What a lovely picture—whereas you yourself have already labelled it *punk*. You confess your difference of opinion and warm argument follows. This is far better than saying *Yes* to each other. There is something in your friend's nature which responds to the picture—unless he is pretending and there is something in you which rebels against the artist's representation.

These primary impressions of what you see and hear and read about are not necessarily right or wrong but they are *original*—at any rate they are to you. Any mental habit which helps to bring out spontaneously an individual

opinion is good hygiene. You are preparing your mentality for a more easy access of new ideas. Besides, the first idea has very often an intrinsic importance.

OBSERVATION AS PROLONGED

The longer kind of observation is the more useful, and the lesson I long ago learned from Agassiz's pupil as recorded by Rueben Post Halleck, is one that stands out from the rest of examples by reason of its high educative value. Prof S. H. Scudder was the pupil in question. Agassiz gave him a fish to look at, with the request to write down what he found. Scudder thought he had done the job in ten minutes, and tried to report to Agassiz. But the Professor was not in his office. So Scudder studied the fish again for thirty minutes. Then for a second and a third half hour. Scudder killed time by drawing the fish. Then Agassiz returned and listened to the report of findings—fringed gill arches, moveable operculum, poise of the head, fleshy lips, lidless eyes. Scudder was astonished when the Master said that the observations had not been careful or exhaustive. 'Look again,' he commanded. The pupil did—and kept on making new discoveries.

This is the way in which scientists and inventors have worked, and their method is to be recommended to every man and woman who has a job which calls for a creative mind. The copywriter in an advertising office will find that the more deeply he investigates a particular task, and all its implications, the better is his understanding of what he has to do, and the more easy are those newer appeals to the public which, while they bear the stamp of originality, also lead to an increased sale of goods. The long look, indeed, has been proclaimed by Guy de Maupassant as the secret of securing new points of view. In the preface to *Pierre et Jean*—I speak from memory—he counsels those

of his readers who would become writers to study a common sight, like a cabman and his horse, until it gives up its secret, and thus discloses a number of originalities.

I admit that the long look, exercised day after day, can be very exhausting, but the effect of this feeling depends in part on the power of one's enthusiasm and the strength of one's will. If those are working satisfactorily there is no ill effect at all when physical and mental weariness demand rest and sleep. A tomorrow will dawn with new energy and new hope.

SEEING—WITH CLOSED EYES.

In all these enquiries into the minutiae of a situation, whether psychological, mechanical, or what not, care will be taken to secure a record on paper of not only fleeting thoughts but of the main factors involved. Is it a new design for a bottle you are after? or a better card index? or a superior approach to the problem of slum clearance? or an insect powder that will really and truly kill insects when you say it will? Whatever it is, the shrewd investigator will not trust to his memory for everything; he will compile a careful record; and he will remember it all the better because of the trouble he took.

Finally, you will not forget however much the eyes see, and with infinite detail, it is the mind that matters. Joubert once wrote "Close your eyes if you would see." Very true. Think, think, and think again and again—that is the great high road to achievement.

To set up, and to follow, hard and fast rules is a mistake. I refer to such statements as "nobody ever gets a good idea after 3 p.m." This is the opinion of General Marshall of the American Army. There is, with all of us, a tendency to turn mental experience into mental laws for everybody else.

CHAPTER IV

HOW TO BEGIN AND CARRY ON.

THE PLAN COMES FIRST

I HAVE already referred to the need of clear ideas about one's personal aim in life. So when a start is to be made, or when additional efforts are needed, it is just as well to scheme the thing on simple lines. Like this —

(a) What have I to do?

(b) What is the best way of doing it?

These are the chief points in stating the object in view. You are going to make a new discovery, or to bring out a new article or to offer a decided improvement in some thing which already exists. You may need a few new ideas of sorts every day of your life—like the men who live by the pen or you may be called upon, as a deviser, to invent new suggestions for raising funds for institutions. The range is infinite in its extent and its variety, but the two questions given above apply in each case, whatever its nature.

Imagine your own aim, and then embody it in words, not grudgingly, but with enthusiasm and generous detail.

(a) *What have I to do?*

(1) _____

(2) _____

(3) _____

You may require six divisions, not three. Don't be content with 'Oh, I know it all, and it is in my head.' Thus act

of committing to paper has been known to reveal important features hitherto overlooked. Next comes

(b) *What is the best way of doing it?*

If you know the best way you will write it down, meanwhile wondering whether there is a better way. If you don't know the best way, you write down details of the way you are using or propose to use.

When finished this plan is ready for action. Now comes the testing time. Something may go wrong, and the plan has to be modified. Well, what of it? A thousand of such plans have gone wrong before success was ultimately attained. You are in one sense a pioneer into the unknown and you have to use the method of trial and error until you are more familiar with the ground. Whatever the merits or demerits of this formal beginning it will have one great value: its basis is your own.

GET YOUR OWN IDEAS FIRST

And that leads me to state, as the first bit of homely counsel, that *it is always best to assemble your own impressions before seeking aid from other sources*.

When Gibbon, the historian, began to make an enquiry into a new subject, of which he did not then know a great deal, what was the first thing he did? Most men would consult a book by the best authority in that particular department of knowledge. Not so Gibbon. He preferred to develop his own ideas, first of all, however ill informed they might be, on the one hand, or skilfully devised on the other hand. And why did he adopt this method? To bring out his own ideas before turning to the accepted authorities.

This is an excellent discipline and may be safely recommended to the reader as a method calculated to develop any possible originality latent in his mind. It prevents too much reliance on what others have said and done in the same line of endeavour. There is no appeal to that labour-saving device called "the search for precedents." What we discover for ourselves, by ourselves may be called knowledge twice over. There is a freshness and vividness about it that is vastly different from book supplies.

'But' the reader may urge, 'what if I knew absolutely nothing about the chosen subject?' The answer is that you are not likely to be interested in absolutely obscure subjects like Einstein's *Relativity*, which only a few people understand. You are concerned, in all probability, with quite practical issues, such as putting a new aerated drink on the market, or a magically easy tin opener, or a plan for restoring the trade of a centre which died after an artificial war boom. On matters like these you can most certainly develop your own thoughts before seeking counsel from other sources.

And when you have once realised the great value of this discipline, you will always be eager to put it into practice, not out of a conceit to formulate 'What I think' but because the experience has proved mentally and practically beneficial. It is certainly better in its results than bare and bald *imitation*.

IMITATION GOOD AND BAD

Imitation is a word with nasty associations—in some of its connections, at any rate. To be called an imitator is to be condemned as second rate. And yet imitation, freed from an excess of disparagement, is seen to be a true method of progress—in fact it is more than a method. It is a

necessary factor in development. As Emerson said: Every man is a quotation from his ancestors; as every house is a quotation from a quarry. The sociologists have not overlooked the value of what they call the copying of socially fruitful variations in the ideas and ideals of individuals. The Red Indian proud aloof and lacking the power of imitation is dying off; the negro on the other hand has a wish to be like the others and he survives; imitation is his salvation. Besides, an old authority has declared that he who would succeed as an inventor must study Nature and *imitate her operations*.

Did not Robert Louis Stevenson play the sedulous ape to great writers when forming his own literary style? Presumably he found that the formal imitation of masters of expression developed a better understanding of their merits and trained his own powers in the arts of language. And is not the golf professional a man who actually trains his pupils in imitation of the best models? I am afraid we cannot join hands with those who sneer at all imitators and keep their praises for originals only, but we can and we do urge the seeker after new ideas to form his own opinion so far as this is possible before he gives himself up to the leadership of some authority. Only in this way can he be sure of getting the best out of his own brains.

The trouble with imitation is that it sets up a habit and habit is not friendly to originality of thought. Plato drew attention to this fact in his *Republic*. Jowett translates him as follows: — Did you never observe how imitations beginning in early youth and continuing far into life at length grow into habits and become a second nature affecting body, voice and mind? You answer in the affirmative as we all do. And a habit always carries with it the impression of being right so that when our accustomed

methods of thinking are rudely attacked we instinctively defend ourselves against what we feel to be wrong or untrue. We are entirely honest in this objection but when further reflection renders our position untenable we ought to admit our defeat with such grace and candour as we can command.

FACTS SHOULD BE SEVERELY CROSS EXAMINED

If you have ever listened to a close cross-examination in Court you will have been duly impressed by the power of question and answer as a means of eliciting information. That is why I suggest severe cross examination as a method of getting new ideas. Put your subject through the Question and Answer machine not gently and gingerly but rigorously. Draw up a list of penetrating questions. You want to know *What?* and *How?* and *Why?* And you are determined about it. You are going to defeat your subject that is you will compel the delivery of its secrets. So you complete that list of questions very cannily not allowing any part of the subject to slip between your fingers. It must be a full and complete confession.

Too often there is merely a *vague* cross-examination. I wonder if ? or There seems to be a hindrance here or Nobody knows as yet. Occasionally a clever brain can get results in this way but the less endowed mind needs something more incisive. So snap into your subject with a series of critical enquiries which will at least expose all its possibilities then examine the list closely with the object of finding questions which appear to overlap. Why? Because those overlapping points contain facts which you are likely to find suggestive in a very fertile manner.

Galton was very much impressed by the ability displayed in Darwin's method of cross examination. He got very quickly to the bottom of what was in the mind of the person he conversed with and to the value of it (1). And what applied to persons also applied to the facts of Nature. Darwin put these on the witness stand and compelled them to disclose many of their guarded secrets.

You can secure the same success by cross questioning your own group of "facts" or associated ideas." I do not mean a light and sketchy affair that will produce little. I mean a serious and thorough going scrutiny with a list of questions which search every aspect of the subject.

LOOK OUT FOR SIMILARITIES

New ideas often emerge from the skilful handling of analogies and contrasts.

As this is an ultra important aspect of our subject, it demands close attention.

Expression by means of analogies is one of the writing man's roads to efficiency. Here are some examples. I begin with the phrase "writing for money." It is sometimes used to denote a mercenary motive, but by using the phrase in one of its innocent associations and combining it with the more derisive view, a smart penman evolves this quip: "Many authors found it easier to write for money when at school than they do now!"

Take the idea of a coupon on a bearer bond. "Babies are coupons," says a journalist, "coupons attached to the bonds of matrimony."

(1) *Nuts and Chestnuts*, by L. A. Tollemache

The following will speak for themselves —

"A little 'understudy' is a dangerous thing"

"No banker likes to have a run for his money"

"A director is known by the company he keeps away from"

"Wives who keep their husbands in constant hot water are creating hard boiled husbands"

"When Sir Isaac Newton was a child, he cried for the moon When he grew up he got it"

"Necessity is the mother of—instalments"

"When men stoop to conquer, some of them stoop very low indeed"

"Yes, money talks but its favourite remark is 'Goodbye' "

Obviously the writer who has a keen eye for analogies—and contrasts—and has also a mastery of expression, is likely to become popular. There is something in an astute comparison which appeals to every mind, literate and illiterate. When the candidate for Congress or the House of Commons desires to refer to the policies of his opponent as politically nondescript he may assail them by asking the old question. "If a cat gives birth to kittens in an old kipper box are the young ones kittens or kippers?" It is always a success.

Stephen Leacock sent a laugh round the world when he wrote that little squib called *'Boarding House Geometry'*. He took his Euclid and set out to find analogies and contrasts between what he knew of Boarding Houses on the one hand, and the axioms and postulates on the other. Here are his *Definitions, Postulates and Propositions* —

DEFINITIONS

- 1 All boarding houses are the same boarding house
- 2 Boarders in the same boarding house and on the same flat are equal to one another
- 3 A single room is that which hath no parts and no magnitude
- 4 The landlady of the boarding house is a parallelogram—that is an oblong angular figure that cannot be described, and is equal to anything
- 5 A wrangle is the disinclination to each other of two boarders that meet together but are not on the same floor
- 6 All the other rooms being taken, a single room is said to be a double room

POSTULATES AND PROPOSITIONS

- 1 A pie may be produced any number of times
- 2 The landlady may be reduced to her lowest terms by a series of propositions
- 3 A bee line may be made from any boarding house to any other boarding house
- 4 The clothes of a boarding house bed, stretched ever so far both ways, will not meet
- 5 Any two meals at a boarding house are together less than one square feed
- 6 On the same bill and on the same side of it there should not be two charges for the same thing
- 7 If there be two boarders on the same floor, and the amount of side of one be equal to the amount of side of the other, and the wrangle between the one

boarder and the landlady be equal to the wrangle between the landlady and the other boarder, then shall the weekly bills of the two boarders be equal. For if not, let one bill be the greater, then the other bill is less than it might have been, which is absurd.

Analogies and contrasts are to be found everywhere. Dr Heinz Judis, a German engineer has been trying to persuade ship builders to place the propeller in *front* and not *behind* as the practice is to-day. He claims that all fast swimming animals like dolphins, seals and sharks have two sets of propellers—the fins in the front and the rear. In fish movements, only the forward fins are employed. The tail is mainly used for steering. By way of contrast steam ships use the "tail" for nearly everything and this engineer asks for a change. If analogies are worth trying out here is one awaiting experiments. (As I write the American plane with a "pusher" propeller appears.)

FISH MARKET SCHOLARSHIP

Has it occurred to you that there is a real sort of scholarship in every big fish market—Washington, New York, or Billingsgate, London? That is, scholarship *for fish*. There are thirty six varieties of the humble haddock, and only men with trained sight can distinguish these varieties, all of which look alike to the average observer. Like,—but oh, how different!—when the difference was pointed out.

So keep these two words in close contact: analogy and contrast. Some of the greatest discoveries in science have had their origin in this way. Thus the analogy between light and heat led to quite a number of later discoveries. Today, as always the intellect of the discoverer is marked by the power to detect minute but important differences.

among a crowd of striking similarities. It is the old story appearances are one thing reality is another. Jevons has it that to penetrate the disguise of variety and seize the common elements of sameness is the quality which furnishes the true measure of intellect⁽¹⁾. What marks would you give yourself in this respect?

You know in a general way the kind of ideas you are after—an invention, a new method of book keeping, an absolutely new welfare manual, a firelighter that will light a new textile better than linen—whatever it is, be sure you know its similarities to, and difference from, everything else of its kind. Delve deeply into every section of your subject. Write down your findings daily. Make a week-end summary of progress made. Organise your research.

THE LAWS OF ASSOCIATION

A skilful use of the laws of association should be employed in the search for new ideas. These laws are — (1) the law of contiguity which means that *place and time* cause certain experiences to be linked together, *e.g.* when you hear a certain tune for the first time on Easter Sunday in London or Chicago, repetitions of that tune will cause you to think of the place and the time when you first heard it. (2) The law of similarity which means that new persons or things will inevitably arouse the recollection of previous persons or things like those you now experience for the first time. (3) The law of contrasts. In one sense this is the same as the previous law except that you are not impressed by a similarity but by a marked difference.

Sydney Smith gives an interesting account of that associational action by which two ideas, accidentally connected,

(1) *Principles of Science* Vol 1 p 5

have a tendency to appear in consciousness at the same time. He says that Descartes was very much in love with a lady who squinted and that the philosopher, for ever afterwards, could never see a lady with a cast in her eye, without experiencing the most lively emotions.

This somewhat frivolous instance of one kind of association may be set over against an instance of another kind, wherein the analogies between light and radiant heat led to many discoveries or we may recall the fact that the likeness between logic and algebra was the basis of Boole's discoveries in logic.

Whatever be your subject or your aim it will be found serviceable to ask such questions as

What is it *like*?

How is it *different* from .

What goes *with* it?

because in this way you acquire valuable information about its natural setting.

AID FROM THE UNCONSCIOUS

There is yet another method to be introduced although I take this step with a little hesitation, for the method is somewhat occult or psychic, and in such matters I always tread warily. Lafcadio Hearn used the method and as he was a writer and critic of consequence, his practice deserves some notice. He recommended the pupil to write down his question and repeat it, quietly and confidently, somewhat in the manner of the Hindoo as he repeats the word OM. Perhaps Hearn got the notion from Tennyson who on occasion, would repeat his own name slowly, clearly, meditatively, until his conscious mind was lulled into inertia and a state of ecstacy supervened.

This is curious in some ways, and yet it is in keeping with what we know about the laws of suggestion. Lull the conscious into comparative sleep, in any way you like, and the unconscious is given a chance. It will begin to deliver ideas. That is why ideas come to us during sleep. The conscious element is entirely inactive. It is also the reason why Descartes advocated a certain amount of "laziness" as a means of promoting mental fertility. Professor Maliaffy says that the philosopher slept a great deal and 'particularly recommended idleness as necessary to the production of good work.'⁽¹⁾ Anatole France, another Frenchman of different calibre, once remarked (in the manner that suited him best) "Since I studied nothing I have learnt much. It is indeed in our leisurely strolls that our great intellectual and moral discoveries are made."⁽²⁾ To which another writer adds, "Yes, the best employed time is that which one loses."

I should be sorry if the reader takes these views too seriously. New ideas are usually begotten after hours of labour, not laziness, but what is meant by these invitations to loaf, and by the more direct method of Hearn, is simply this: after hard mental work, *relax*. Give the conscious a rest, and let the unconscious have an opportunity of offering you some of its riches. There is no need to be ultra curious about the way in which the unconscious suddenly imparts new suggestions, notions, fancies, or queries. We simply do not know. We do not know how the unconscious governs the action of the heart, and exercises control over other physical functions. That ignorance, however, does not worry us. And we need not

(1) *Descartes*, p. 138

(2) *Life and Letters (Second Series)*, p. 116

worry about the specific origin of new ideas. We shall find that the laws of association are in the main responsible, and they can take care of themselves.

It is abundantly clear, therefore, that the so called laziness does not itself produce the new idea. The creative industry of the intelligence, is responsible for that result, but the suspension of intense seeking gives the unconscious its opportunity. Dr W B Carpenter conducted many enquiries into this matter, and says that, 'It is a common experience of inventors (whether artists, poets or mechanicians) that when they have been brought to a stand by some difficulty, the tangle will be more likely to unravel itself if the attention be completely withdrawn from it than by any amount of continued effort' (1). Yet many ardent fellows have worried themselves into an illness because achievement has been slow in coming.

ABSURD IDEAS—SO-CALLED

If you sometimes get what looks like an absurd idea you need not throw it into the discard. You may be an ultra rational fellow, and not prepared to entertain anything that looks like a piffing or merely foolish suggestion. But wait a moment. Some of these apparently foolish notions have turned up trumps after they have been treated in a friendly manner. Singer, of sewing machine fame, got the notion that he might put the eye of the needle at the sharp end, and not at the blunt end. He felt at once that this notion was quite wrong. And yet it proved to be right. So if you do get a notion that sounds like bosh, and which your friends openly call idiotic, you are entitled to spend some time on testing the idea for what it is worth. You never can tell.

(1) *Mental Physiology*, p. 524

Faraday was accustomed to study carefully even his wildest guesses and if we could peer into the secret mental history of men like Bohr Rutherford Einstein and Heisenberg, we should doubtless find that many of their now accepted conclusions were at first so startling as to appear most improbable (1) It is often some hidden relation (says an old writer) some deep seated affinity which is required to complete, or rather constitute a great discovery, and this is often found among the wildest conceptions and fancies after they have been sobered down by the application of closer observation and repeated experiment

But do not misunderstand me In speaking of wild fancies I am not referring to nonsense ideas like those mentioned in *Gulliver's Travels* You will recall the famous paragraph beginning He had been eight years upon a project for extracting sun beams out of cucumbers Obviously that is the sort of idea you can laugh at—and forget

(1) If you have had your attention directed to the novelties in thought in your own lifetime you will have observed that almost all really new ideas have a certain aspect of foolishness when they are first produced A N Whitchhead in *Science and the Modern World*

CHAPTER V

LASTLY, FORM YOUR PROGRAMME

WHERE ARE YOU GOING?

I DO not suggest that the reader has had no programme. He could not have worked at all unless he had followed some sort of plan. But that plan whatever it is or has been will be all the better for a thorough overhaul in the light of the preceding chapters. Method is not every thing but it has values which a progressive mind cannot afford to ignore.

Again all programmes that are worth while are based on individual needs. Especially do they take into account those physical and mental conditions which experience shows are favourable to the production of new ideas. These conditions will now receive our attention.

But first of all do not always expect a clear division between what is physical and what is mental. You don't know and nobody else knows where your body ends and your mind begins. The boundary marks in many places are obscure. For instance we often speak of physical pain yet some medical authorities tell us that there is no such thing: all bodily pains are really experienced in the mind. You disagree. You instance a toothache. To argue the matter is outside my province. I referred to it here only to show how complicated are the relationships between mind and body.

QUIET AND SOLITUDE

You may be inclined to laugh when I say that stillness and solitude are conditions favourable to the production of new ideas. You may also object that in a quick moving age like this there is no chance for stillness and that life of the period demands a sociability which is not compatible with solitude. And your friend may chime in, saying,

"Stillness and solitude are old fashioned and out of date." No, quite wrong. They are as vital and as necessary as food for the body, a fact which never gets out of date.

Nearly all successful thinkers and inventors have, for the most part, worked alone. A modern writer who has studied their methods closely has said that the first operation of a great discoverer is to withdraw himself from the intellectual fashions of his time to pursue a course that is entirely his own, and that the solitude consequent upon this withdrawal is very obvious in every case. Maxwell preferred 'wandering alone', Michelet grew up "in isolation". Einstein as a boy preferred to have no comrade. Newton, Darwin and Faraday had the same solitary preferences.

A 'RETREAT' FOR THE MIND

The other day I chanced to open a book called *Retreats of the Soul*, by Sir Henry Lunn M.D. He was once a medical missionary in India then became a travel and tourist promotor with a genius for organization, but he was always interested in the religious life. Here was a book on solitude and separation for the good of the inner life, and it struck me that another book might be written on *Retreats of the Mind*, for, as Dr. Lunn remarks 'Over strain is almost as fruitful a cause of moral ruin as alcohol.' There could be no better policy for business and professional men in these times than to take a few days off occasionally

at some quiet centre where alone they could recuperate their energies restore their lost mental perspective and acquire new strength for the future. In fact I know men who follow this very method either to solve hard problems or to get new ideas.

True there are some men who cannot bear to be alone even for twenty-four hours. They become nervy or jumpy. Any sort of retreat is out of the question. But most men with a little practice could turn the quiet of a two-room lodging on the sea front or near the foothills into a grateful and intellectually profitable experience. The will to act in this way plus a plan are the two ingredients of success.

MENTAL WHIMS AND ODDITIES

You may possess already or you may develop what might be called *oddities* of behaviour when cogitating for new ideas.

Writers have nearly always been peculiar in this respect although many men have been too shy to take us into their confidence. And no wonder for some of their eccentricities were bizarre enough. Schiller had a drawer in his desk filled with rotten apples. Their odour formed the physical basis of his literary inspirations. Jokai needed *violet* ink. black and blue made ideas impossible. Thomas Hardy began work by removing his shoes or slippers. Stevenson required a room with bare and whitewashed walls. Shelley munched a piece of bread while composing and Ibsen gazed at little images.

Nick Carter used to obtain the best plots for his stories after a good beef steak meal and in this respect he certainly has few companions for the general rule is not to tax the brain in creative effort until at least one hour after eating.

But writers have always had these individual differences. Rousseau when composing liked to be bare headed in the sun and Zola pulled down the blinds at midday because he found more stimulus in artificial light.

One does not recall such wild eccentricities in the lives of men like George Stephenson or Thomas Edison and nothing comes to memory about similar habits of men of science—unless it be items like the absent mindedness of Sir Isaac Newton. Yet all seekers after ideas may discover some physical fact that is favourable just as Milton, Descartes, Leibnitz and Rossini found the horizontal position more advantageous than any other (1). These are sound psychological reasons for this. Lying down gives a better flow of blood to the brain.

Victor Hugo when living in Guernsey always used the fresh morning hours for the inception and development of his ideas. He never wrote a line in the afternoon. He used that period for a kind of meditation which he carried on while being driven about the island alone and giving himself up to any reverie that chanced to come upon him. It was a season of incubation. Mozart said: "When I am in particularly good condition, perhaps riding in a carriage

then the thoughts come to me with a rush, whence or how I do not know and cannot tell. I have heard men of less distinction say that a lazy car ride or a bit of train travel has been highly productive in ideas. Yet as a method it might be unprofitable to many readers.

You may not go so far as this in the formation of oddities but if you should why worry? You are sure to create a posture of the body which experience has proved to be beneficial for promoting ideas or it may be the simple act

(1) *The Influence of Bodily Position on Mental Activities* by I. F. Jones Ph.D.

of walking between two favourite trees is better than any thing else

WORK IN ADVERSE WEATHER

How does weather affect your creative powers? Are there days when you are in excellent form because the day is bright and the air stimulating and electric? If so, you are only like the rest of us. We are all subject to mental rhythm—one day on the top of the world, the next day feeble and depressed, at any rate not up to concert pitch.

Climate, the atmosphere, and the changing seasons are responsible for these bodily and mental conditions. "I work more easily when the barometer is high than when it is low," said Goethe to Eckermann. That is true for all brain workers. Not that much can be done about it, for work must be done whatever the barometric pressure may be. Yet sometimes a special bit of investigation can be deliberately selected and advantageously pursued when atmospheric conditions are right.

Monday, as a day of the week, is not 'liked' as much as other days. Some years back, Professor E. G. Martin, of Cambridge (Mass.) enquired into this matter, and found that men who worked on Sundays paid for it to the full next day, they had denied themselves the rest period which the experience of the ages had proved to be necessary. Mind and body are a unity, and they have to be treated as such, otherwise the penalty is exacted.

TIMES AND PLACES

There will be *times* and *places* which are found to be favourable for new ideas. Obviously, the brain works more easily in the morning period than at the end of the day.

when overtaken by fatigue. Yet there are men who might be called night birds—with them imagination is more active in the evenings and moves with greater speed and daring. I have heard men exclaim: I am not really mentally keen and dive until after 6 p.m. From then until midnight I can work with vim. Individual temperament or habit is the deciding factor. Nevertheless the night bird would be a wiser man if he tried the experiment of carrying out his industrious programme in the mornings for whatever his habit or temperament may be the fact remains that real freshness of outlook is associated with the earlier part of the day.

D. I. Watson in his *Scientists Are Human* refers to two research workers who questioned successful scientists on the conditions which were found to be helpful in creative efforts. The replies of the scientists—you will remember a previous reference to this—contained among other opinions this perhaps unexpected contribution: that the best ideas often arrive when the mind is not consciously directed towards the problem. In that sense therefore there is no particular time or place when the investigator may expect an accession of desirable thoughts: they may appear at any moment and they may come when he is engaged on an enterprise quite different from that to which the new ideas belong.

Places are rather more assured as stimulation centres for we have always had some experience of places indoors and out of doors in which we could concentrate better than anywhere else. Whenever a particular spot becomes associated with good luck in finding ideas there is a natural tendency to return because of something about the association which promises the best results.

MENTAL CONDITIONS

At the outset I should like to stress the importance of having a clearly defined aim in life—that is, you must know exactly what you want. The advantage of a well-defined aim over the ill-defined is obvious. There is an immense saving of time and effort when the goal is kept in view. If a man has resolved to further the achievements of television, for instance, he will find that his reading, his thinking, his conversation, and his actions are governed by this main purpose, and he makes progress accordingly. If, on the other hand, he is in general an aimless fellow, then in spite of ability, he loses time in changing from one enterprise to another, and the value of his efforts is lost to him for the same reason.

Furthermore the possession of a clear cut purpose helps to arouse and maintain enthusiasm. He is a man with *drive*. Not only is he able to take an initiative but he can maintain it. Ambition overcomes difficulties. These are elementary facts I know but it is astonishing to meet able men who are not getting anything like the best out of themselves because they are deficient in these allegedly commonplace qualities. Commonplace or not they are vital.

EXPECT TO WIN

Of course, you must work with *expectation*. To seek for a new idea the while you are plagued with the feeling that you will never find it, is to work hopelessly. Why not get the best out of your abilities by believing that your search will be ultimately successful, no matter how hard the going may be? Edison once told me, in a letter, that the hunt for an electric bulb that would work was the most difficult of anything he ever went after, but that hopeful persever-

ance won the day He tasted the relish of victory before
he got it As Shakespeare phrased it —

Expectation whirls me round
Th' imaginary relish is so sweet
That it enchants my sense

Don't forget that hope is one of the three great virtues, and that a distinguished authority gave it the second place Faith Hope and Love Then is it a kind of pious duty to be hopeful as we perform the daily round and common task? That is a question for a spiritual guide to answer As a plain layman I should be inclined to give you a little shake and say, What on earth is the good of looking for a serviceable idea if you despair of ever finding it? The old Latin proverb is the tonic you need 'Believe that you have it—and you have it' (1)

Despair is fear in its almost final form It is just about to hold up its hand in surrender Pavloff tells us that fear is our most subtle mental enemy Again, don't be governed by the feeling that you will *always* have to study hard, day in and day out, to evolve the idea that you need Admittedly, there will be some hard work in gathering facts and in probing their meaning, but one of the secrets of originality is to work and wait Why wait? Why not go on working until the idea is found? Because that is not the way in which new thoughts arrive Often they 'leap' into consciousness, and the best preparation for this happy

(1) Einstein in his youth said 'Why should I work in the field of mathematics where I cannot produce anything creative Yet, ultimately, he led the world in daring hypotheses See Reichinstein's *Albert Einstein* p. 38 (Prague 1933)

event is industrious enquiry into every aspect of the subject. You must give your subconscious an opportunity of turning the matter over and time is needed for this purpose. The new idea may come suddenly in a matter of hours or days or weeks but it will come if you follow the method closely.

This waiting is neither inaction nor indifference. It is a device of the intelligence by means of which new power is developed. There is a passage in the *Phædrus* which covers this point and Arthur Lynch freely rendered it thus: Let the mind play at times that it may return to work with vim.

THE VALUE OF SUGGESTION

At this point I want to introduce the real reason why expectation and waiting are such excellent discipline. It is because consciously or unconsciously you have made an autosuggestion to the effect that the much desired new idea is *coming*. And I take this opportunity of urging the formal and confident use of autosuggestion at all times but especially during the moments before falling asleep.

The difficulty with many people is this: that to say 'The idea is taking shape and will soon appear in complete form' sounds like telling oneself a lie—especially when progress is painfully slow and the seeker is tempted to give up in despair. But it is no lie—it is *truth* working on a higher level than reason—higher because in seeming contradiction to reason. Besides the experience of thousands of people who have proved the success of suggestion cannot be set aside and until you have experimented in the right way you cannot judge the issue fairly. So just before falling asleep say to yourself: That new idea—so far off as it appears to be—is coming nearer and

nearer' And, believe me, its approach will be earlier and clearer than you have imagined Your act of self suggestion is really a kind of prayer addressed to the greater self, and all such prayers are answered The laws of mind and soul are as inevitable as the laws of Nature (1)

An intuition—a hunch you may call it—is an answer of this sort for when a human mind uses the formula 'suggestion + expectation' all mental resources are requisitioned for the end in view All "like" ideas are, strictly speaking, in love with each other, and therefore they tend to combine

If you are investigating the possibilities of a new suggestion for a toaster for the housewife you may think you are dealing with nothing more than Nature's laws and material That is wrong You are dealing also with *mind*, for mind *adds* something to everything it enquires into (1) This process of adding need not astonish you It is common to all God's creation 'Seek the Ideal,' says the old Book—in substance, at any rate, and, while you are doing that, 'the other things will be added'

PLANT A GARDEN WITH IDEAS

Keep an Idea book, and allocate a page or more to each entry The entry itself should be as complete as you can make it at the time To jot down a few words as a reminder is not enough, inasmuch as new suggestions are by nature rather elusive Sometimes they escape entirely,

(1) "All the intellectual faculties can be developed by suggestion" says Baudouin in his *Suggestion and Auto Suggestion* p 174

(1) See *Scientists Are Human*, p 12

when a full note is not made of them at the moment of their appearance. This applies particularly to ideas which come in the night hours.

The wise course is to describe the idea as fully as possible and then leave a blank space for further additions and comments for you will often go through the pages of your idea book out of sheer interest in their contents. In a real sense you are engaged in what might be called mental gardening and your idea book is the cultivated ground in which you nurture growing ideas.

SPECIMEN ENTRIES IN THE IDEA BOOK

- (1) That air conditioning can be made available for every home by reducing the costs of (a) manufacturing the mechanism also (b) the costs of installation. The first step is
- (b) That a worthwhile research into agricultural processes can be made by investigations into the alleged superstitions respecting the planting of seeds—e.g., during certain phases of the moon.
- (c) That new ideas for avoiding waste in every day details as well as in large factory concerns would be greatly serviceable if placed before the public in handy form.

Emerson once awoke his wife in the middle of the night without intending to do so and when she enquired the reason he said, Only an idea I must put down. Ideas that come in the night—are bare suggestions perhaps—should be

recorded, otherwise, they are difficult to recover. Dr Banting got up at two in the morning and wrote in his Note Book a few sentences beginning with 'The off pancreatic duct of dogs'. He then got into bed again and slept. But that note led, ultimately, to the discovery of insulin. Carry a little waistcoat note book for day time use.

CHAPTER VI

A CLEARING-HOUSE FOR NEW IDEAS.

"PRODUCE GREAT PERSONS" SAID WALT WHITMAN.

UP to the present I have considered the individual only. The method was this: Make the individual right: then the group will prosper. Take care of the singles, and the plurals will take care of themselves. Walt Whitman said, you will remember, "Produce great persons: the rest follows" So it does, *in the course of years*. But sometimes the strong persons are overcome by the weak, acting in vast numbers, and controlled by fanatical suggestion; there are waves of error, of wrong-headedness, and of unintelligent imitation.

The brain power of the nation calls for guidance. This is one of the functions of statesmanship, but as yet, although we have had a Brains Trust, we have had no great psychologist to lead the masses. He will doubtless appear in one of our many tomorrows.

Meanwhile, why not have

A CLEARING-HOUSE FOR NEW IDEAS.

on lines that will secure some reward for the thinker, and at the same time benefit the community at a modest cost?

The Patent Office does not perform the function of a clearing house. its job is to protect improvements in such a way as to guarantee the inventor the reward that is due to him. And you cannot patent *some* ideas, especially those which are bound to remain ideas, without being embodied in a material manner. Yet such ideas might contribute to the mental and spiritual enrichment of the world.

A MENTAL STIMULANT

The monthly record of such an institution ought to be interesting to a high degree containing as it would the originalities real or attempted of scores of men and women working in all departments of life. If you are interested in *chaff* for instance and have had a few notions about some new use to which it could be put you would welcome particulars from those members of the Clearing House who contribute progressive views—somewhat but not quite like your own. Or if you have a brand new method not yet fully developed of teaching Algebra of making cart wheel grease of recording votes at an election or of making jam would you not like a quiet half hour reading the narratives of people who are like minded.

The existence of a Clearing House for New Ideas would be a mental stimulant. Is it not worth the while of any government anywhere to encourage and conserve the thinking of its people? In the present imperfectly organised condition of affairs scores of men and women are engaged unprofitably in plans which either duplicate or overlap each other. There is brain waste everywhere. A Clearing House efficiently managed would not only obviate this difficulty but hasten the arrival of good results.

THE CLEARING HOUSE IN ACTION

How would it work? To answer that question fully calls for more space than we can spare but here is a brief list of topics and questions. They are presented without classification and in simple alphabetical order.

CALENDARS

Can't we devise a better method of marking and recording the passage of time? We now bundle daylight itself

with intelligence. Why not time: the seconds, minutes and hours? The days, weeks, and years? Is leap year due to a law of Nature? Why can't we do without it?

CARDS.

Isn't it time we had a truly new card game? One that taxes memory and ingenuity, and yet brings a fresh interest into recreation? Why have we to be bound to the Kings, Queens and Jacks of bygone ages?

CLOTHING.

Can we now face the possibility of a desirable change in the form of men's clothes? Are we to continue these cloth barrels called trousers? *Must* there be a *waistcoat* and a *coat*? And will the tie and the collar *always* be separate? Or shall we devise something simpler and more effective? What about an increase in the use of colours?

COMPETITION.

"No competition at all" seems to be the gospel of some of our reformers. Senseless competition, yes. But there is inspiring competition, as in running a race. *Must* that go, too? We need a lot of new and practical ideas about man *v.* man, nation *v.* nation.

CURRENCY.

What is the real objection to a world currency, thus abolishing national currency? How would you make international exchanges easier?

GREENHOUSES

What do we want a greenhouse to do? And does it do it or not? Often not. How many uses has a greenhouse as at present constructed? To how many more uses could it be put if the heat was electric and electrically controlled? Can greenhouses be cheapened in original cost, and in maintenance costs?

HOUSES

The fact that steel framed standardised dwelling houses can now be put up in three days does not mean that we have reached the limit of invention and adaptation. The possibilities are always numerous. Here is a sphere for women. Now, ladies, give evidence of your ingenuity. What are the six chief requisites of a good house to live in?

INSECT ENEMIES

We do not appear to be making much headway with schemes to provide remedies against insect enemies. Possibly, we are doing more than is generally known, but insect enemies are a real menace. Here, then, is scope for the inventive genius of men. Get busy on the subject, first of all answering the questions 'What has been done already?' Which is the most urgent need?

NICKEL

Who would say that all the possible uses of nickel have been found and applied? Nobody. If, then you are interested, marshal your suggestions.

especially as to promising regions for prospecting

NOISE

Progress has been made in the abolition of noise, and we all know how noise can be harmful even if only subconsciously realised. There is vast scope for suggestions *re* the elimination of noises in the street, in factories, at railway depots etc.

SOME MODERN ACHIEVEMENTS

But these are no more than a group of suggestions' somebody says. Agreed. Nevertheless it is easy to offer a list of actual achievements. They are happening every day, in every week, of every year—not all of them necessarily great achievements, and yet a few are outstanding. All of them have interest.

- (1) The odourless onion has arrived. A real onion too and not a stinker, also possibly 'tearful'. The patience needed to develop it would make old Job wonder.
- (2) Somebody has managed to invent a contraption which takes the bang bang noise away at points where two railways cross at right angles. Discs which make a continuous rail, are the secret. Have you ever tried to sleep in a house close to tram lines which cross? Ye gods!
- (3) Somebody else has managed to invent a little electric affair which prevents the mirrors in the bath room from being 'steamed up'. Not ultra important, but, all the same, blessings on his head!

- (4) A much more taking performance is the bringing out of a compound which prevents water from penetrating textiles—clothing in particular. The liquid just rolls off and leaves no mark. It's quite nice to feel that the coffee spilled either on dress or coat is no longer gifted with the power to coffee stain. And the rain shower outside is faced with confidence.
- (5) After the war problems of waste material will receive enlightened attention. It should have a good start for already it has been proved that two tons of farm waste can be turned into gas for lighting heating and cooking also power for farm engines. The two tons give gas for almost three months.
- (6) Russia is making its own synthetic rubber. (Did I say *Russia*? I *did* say *Russia*.) The new rubber comes from coal and is a complete success. A surprise? No doubt. There may be more later. The Russian mind is awakening to its possibilities.
- (7) I open a magazine and read this. Wood is again coming into its own. Here is evidence offered in proof. Cattle food, gas for heating and power rayon imitation leather phonograph records medicines dye stuffs are now made from wood. (*Atlantic Magazine*) The statement reminds me of the definition of chemistry given by a nigger. It shows a feller how to git anything you wants from any thing else.

ORGANIZING NEW IDEA SOURCES

The list could be extended almost indefinitely which fact goes to show that there is in some countries a very

ictive condition of mind favourable to serviceable originalities

But everywhere there is need of better organization. All spheres of advance in which physics or chemistry formed the chief factor ought to have intelligent direction according to plan. Spheres in which the chief factor is mechanical demand the same oversight and the facilities provided by the Clearing House could not but be helpful to a prominent degree. Ideas and resources could be pooled thus avoiding waste effort. Why not extend the numbers of researches by doing work with overlapping laboratories and by mapping out a wider programme covering more ground and eventually achieving better results?

Some people however, complain in this way. You can organise and organise and organise until you kill all life and spontaneity. You can set up rules and regulations until finally there is only mechanism left. I agree. But an excess does not justify an abolition. Why do away with *all* filing just because some filing fiend has elaborated a scheme with such detail that you need a correspondence course to understand it. And even then you can seldom find any document promptly.

To make the best use of the best brains in the national interests it has become necessary to institute a sort of supervision the intention of which is not to put a brake on individuality but to provide means for its expression.

HOW YOU DISTRIBUTE YOUR BENEFITS

There is a further reflection. We never know how a new idea duly considered and applied may affect the welfare of other spheres of action seemingly quite distinct and separate. Durell has asked. 'Who would have dreamed that the discovery of the first aniline dye by Perkin

should be an essential link in the development of modern bacteriology and therefore in the crusade against tuberculosis and other infectious diseases?

We never know the complete destiny of new ideas. Even those of the simplest kind may lead to associations totally unexpected and very often the final outcome embraces a little group of existences which exert real influence on the happiness of the race.

If your ambition is to produce a new fact that will directly benefit the community and incidentally yourself you will work diligently enough to accomplish your aim but you will work all the more satisfactorily if you realise that your energies will not only produce the new fact but open the way to other new facts similarly advantageous.

THE CLAIMS OF REVERIE

The claims of *reverie* as a method of producing new ideas are better thought of to-day than they used to be. There was a time when we laughed at the fellow who sat alone waiting for an *inspiration*, but a better knowledge of the mind in action plus a more careful analysis of the results of reverie induced or accidental has given a better standing to the process itself.

The most popular term for reverie is a brown study. Like this a man comes to himself suddenly—to find that he has been sitting still and staring into the fire or at some other object the while he was concentrating on a train of thought e.g. what is going to happen in local politics or how will he be able to pay his income tax this year? A reverie is a thought process made up of memory and imagination. Obviously these two factors are of the very

greatest importance in originating new ideas, hence the ability to use reverie, in the manner indicated, is an ability to be cultivated

I hear an objection "You're telling me to be absent minded, then?" No "The absent minded fellow will stop to think in the middle of the railway track despite the shrill whistle of the train in the distance" The man who uses reverie as a means to an end chooses a quiet spot, in order, undisturbed to "think things out", fully and finally, if possible Essentially, reverie is not an organised bit of mind action it comes and goes 'as it listeth,' but its visits and its results can be controlled

WANTED. A BRAIN POWER ENGINEER.

We need a brain power engineer a man who knows his subject, not only from books and by means of experiments but from actual practice among men Take education He does not regard it, on the one hand, as a method of stuffing the mind full of facts and notions nor, on the other hand, does he regard it as a course of mental cocktails stimulating for an hour, then dropping away to nothing Experience has taught him that the highest results spring from proper mental discipline

I stress those last three words I have met and talked with men, living in three continents who although they have done well, could have done infinitely better if they had had trained minds In the last resort, however, they did not know how to think They "relied on what they believed was the teaching of experience This was good enough if they had interpreted experience rightly If wrongly"

"To teach people to think," says Professor S H Butcher, "is perhaps the highest end of education, and to learn to

think is the most difficult thing a man is ever called upon to do. But the undertaking is of such importance that all people who are interested in the welfare of the community—educational authorities in particular—should give more attention to it than it has received in the past. The task may be difficult but that must not deter us.

In view of the fact that it is by means of the mind we know persons and things in general, and also arrive at conclusions which may deeply affect human happiness, surely the knowledge of mind, as mind, and of the right way to use its powers, should figure prominently in every programme (1)

DO YOU KNOW YOURSELF?

Let us look a little more closely at this seemingly technical yet very practical issue. How many of the following questions can the reader answer about his own mental powers? He ought to be able to answer at least 85% of them —

- (1) Why am I mentally flat and stale one day and brisk and bright the next? This often happens
- (2) How can I decide whether I have much imagination or little, or none at all?
- (3) Is it wise to fight fatigue and compel mind and body to make new efforts? Is the mental 'second wind' idea a trifle dangerous to some people?
- (4) When interest in one's plans declines, although temporarily only, how does one eliminate the cause and begin again hopefully?

(1) See *The Art of Practical Thinking* by R. Weil Jr

- (5) Mental indigestion is caused chiefly by an excess of impression over expression—that is, stuffing the mind so full as to prevent proper digestion. How would you deal with this difficulty?
- (6) My mind, in waking hours, seems to be a self-flowing stream of conscious thoughts. How can I get control of the stream and make it flow in the direction I desire?

YOU ARE CROSS-EXAMINED

The brain power engineer is skilled in the knowledge of the nature of mind energy, also of its power and limitations in action. For instance, he is an expert in what might be called 'the psychic audit'—that is, he knows all about mental *income* and *outgo*. And he can put us through a cunning cross-examination as to what we have received and what we have spent—intellectually speaking. Listen—

Q 'How do you spend your day?'

A Well, I'm holding down a job. Seven hour day. Not too tiring. After supper I go into my little tool shed and work until midnight. I'm getting on with the contraption, but it's taking a longer time than I thought.

Q 'Recreation?'

A I go occasionally to the cinema with my wife."

Q You don't see much of people?'

A Hardly ever.'

Q You thus gain time for concentration but you lose the values of mental change of human contacts and of time for increasing your acquaintance with the methods of other investigators. Stick to it is good but you need the benefit that comes from *other* sights and sounds *other* people's conversation and a deeper insight into *other* inventors' victories. You ask me how this otherness will help you? By giving your mind a rest first of all. Why bang your head against a stone wall so to speak? Concentration is very necessary but it can be applied unintelligently.

Give yourself a couple of evenings off every week. Half the evening can be spent in reading mechanical journals and the other half can be spent socially.

You'll be all the better for it. You are at present overspending your mental bank account. Your balance is low. Pay in some more deposits—physical and mental. Work up increased credit.

THE MIND'S BANK BALANCE PROFIT AND LOSS

There does not appear to be anything profound in this recommendation or in the idea itself yet Pierre Janet in his *Principles of Psychotherapy* (1924) says that while psychology is obliged to take up the problem of the economic administration of the mind's forces yet we do not know how to perform the task although it is probable that one day we shall learn how to establish the balance and the budget of a mind as we establish those of a business firm (p. 313). We are already making headway but more by experience rather than by formal experiment.

Every man has to be his own mental accountant and auditor until psychology can offer us a more detailed

guidance than that available at the moment. I am not complaining. The work of an individual mind-clinic would be as colossal in extent as it would be intensive in regard to detail. To guide a man of 18 to 21 intelligently, so that he could expect to obtain reliable information and counsel about his mental self is an undertaking of some magnitude, calling for hours of investigation by enquiry and experiment. Some day the right leader will appear, and, following his lead, we shall no longer be at the mercy of events, or our whims and oddities. Each individual, as an individual, will see himself as he is, and move forward to his goal with confident step simply because he has obtained a more intimate knowledge of his powers and of the right way to use them.

How much do you gain and lose by the presence of moods? There are good moods and bad, yet the psychology of moods is still in its infancy. There is no expert guide to tell us about the signs of their coming, or what to do while they are upon us, and nobody to show us how to get rid of the mood that is bad.

There is another place in which a brain power engineer could be very useful especially if he had had experiences from which he derived valuable lessons. There are several species of mental mastery, and mastery of moods is by no means the lowest on the list.

Brains are, in some respects like motor car engines. at times they won't start in the mornings. Is it a mood? or the weather? or a stronger idea which asserts itself? or a subconscious dislike? or ? The brain power engineer, after a brief analysis, will tell us what to do, and that moves us forward in the direction of self help. Next time we shall know enough to become our own engineer.

THE "OVER FORTY" NOTION

You will not be influenced by the idea that after 40 a man's brain power begins to decline. Admittedly, it does decline in many cases, but that is because the individuals concerned allowed themselves to become slack. Curiously enough, when they do that, brain power ceases to develop. So watch the danger years and go right on—confidently.

CHAPTER VII

SOME POINTS FOR FINAL CONSIDERATION

SETTLE YOUR VALUES

I SHALL ask the reader to make his own formal recapitulation of the foregoing sections. He will then be able to stress those features which to him are more important than the rest. But there are one or two matters on which the present writer would like to lay additional emphasis.

The first concerns the everlasting subject of values which when men talk about them is summed up thus: What am I going to get out of it? A not unreasonable question. The history of invention shows that great rewards are often forthcoming in well-managed businesses, but the right distinction should be drawn between material and spiritual rewards. Milton's *Paradise Lost* was what the modern man would call a financial flop, but what of the contribution Milton made to national poetry? Can *that* be measured?

J. M. Barrie got an idea for a book which he called *The Little Minister*, and its sales and other business brought him £50,000. Hervey Allen received £40,000 in royalties for four years from *Anthony Adverse*. These figures represent cash values only. In addition there is the mental value as seen in enlightenment and inspiration. Sometimes as in Wordsworth's famous ode the material return is insignificant while the spiritual value is beyond computation. Occasionally a new idea may have worth of a kind which no figures can embody, even a new plan for slaughter in warfare may come under this head. Walter Bogen, who

was Hitler's explosive expert in the European War, used his manifest ingenuity to produce compounds which when touched off, were calculated to destroy tens of thousands of lives. He was the organiser of the magnetic mine.

The new idea, to be profitable to the inventor as well as useful to the public, need not be a colossal affair. A small contribution to time saving can produce great financial results.

BECOME YOUR OWN PSYCHOLOGIST

Another fact I should like to stress is this: that you should aim to secure a large measure of self-guidance. Why? Because it is a good thing to depend on yourself, and further, because you will need self-guidance. Guides are themselves becoming more and more quarrelsome, and the unsophisticated reader begins to be discouraged. He does not know what's what, or who's who. So, being in a quandary, he does nothing.

Take psychology. Which is the right book for me? asks a reader. I've tried X—— and Y—— and Z—— but they do so often disagree. I get confused. It's like learning three different systems of shorthand at the same time." I know how this man feels, and I fear there is not much help for him. Professor F. C. Bartlett, of Cambridge, England, referred to this condition in an article which appeared in the *New York Times*. He said: "The trouble is that there seems to be almost as many psychologies as there are psychologists, so not only the intelligent onlooker but also the thoughtful expert is inclined to wonder whether psychology can ever be anything more than a sort of noisy dog fight between conflicting theories." Yes, the

mental science of to-day is full of bow wows, and occasionally the yapping is irritating in the extreme. But, as Professor Bartlett affirms, 'In the apparent chaos of conflicting opinions that make up current psychology, it is possible to discover certain points towards which practical agreement is converging. These are the items to look for in your reading, but, meanwhile, every student of the subject will begin to formulate his own system of psychology—after reading such a volume as Ennever's *Your Mind and How To Use It*, or Richard Weil's *The Art of Practical Thinking*. He will draw up a growing list of *certainities* about the life of the mind, and, in time, this list will be both lengthy, significant and efficient in practice. Besides, a man may have a most useful working knowledge of human nature without consulting the pages of a scholarly guide. He has learned all he knows from observation and experience. Yet even he would be all the better for a more intimate acquaintanceship with the finer points of his own mentality, and that of his fellows.

WHEN DO YOU GET YOUR BEST IDEAS?

For instance, he will always be discovering little facts which point the way to an answer to the question 'When and where do I get my best thoughts?' I have referred to this previously, but its importance demands an additional paragraph. Here is how Dr Crichton Browne, an eminent alienist who lived to be 97, used to encourage the flow of ideas —

'The true witching hour is not, I think, at twilight, but at the dawn. Let any healthy man, after a refreshing night's sleep and a cup of tea, lie on his back in his bed in complete quiescence, mind adrift, thinking

of nothing watching through the window pane the gradient light and there will come to him new insight the most brilliant ideas of which he is capable inspirations and happy turns of expression (1)

It is only fair to say that not all of us would find this practice helpful and some people's domestic routine would not allow either the time or the leisure. But the essential point is this find out and follow the practice which experience has proved to be beneficial

THE OLD VIRTUE OF PERSEVERANCE

Another point to which I would call special attention is that success in producing new ideas is an affair of *character* as well as *mental ability*. Haven't we all known men of very considerable talent who have never quite justified themselves because they lack the stick-to-it quality? They changed from this thing to that and just when a bit of perseverance might have done wonders they changed back again or they were caught in the meshes of a completely new fancy. In the long run they did nothing distinctive.

Men and women who live by writing are sometimes pessimistic about the invention of plots or of some new and desirable form of treating a topic—but why accept the *ipse dixit* of M. Georges Polti that there are only thirty six possible plots with their variations? Look through the list below then try to believe if you can that all the situations of life dramatically considered are included

(1) *What the Doctor Thought* p. 188

Polt's classification is as follows —

- 1 Supplication
- 2 Deliverance
- 3 Crime pursued by Vengeance
- 4 Vengeance taken for kindred upon kindred
- 5 Pursuit
- 6 Disaster
- 7 Falling Prey to Cruelty or Misfortune
- 8 Revolt
- 9 Daring Enterprise
- 10 Abduction
- 11 The Enigma
- 12 Obtaining
- 13 Enmity of kinsmen
- 14 Rivalry of Kinsmen
- 15 Murderous Adultery
- 16 Madness
- 17 Fatal Imprudence
- 18 Involuntary Crimes of Love
- 19 Slaying of a kinsman Unrecognised
- 20 Self-Sacrifice for an Ideal
- 21 Self-Sacrifice for Kindred
- 22 Sacrifice for a Passion
- 23 Necessary Sacrifice of Loved Ones
- 24 Rivalry of Superior and Inferior
- 25 Adultery
- 26 Crimes of Love
- 27 Discovery of a Beloved One's Dishonour
- 28 Obstacles to Love
- 29 An Enemy Loved
- 30 Ambition
- 31 Conflict with a God
- 32 Mistaken Jealousy
- 33 Mistaken Judgment
- 34 Remorse
- 35 Recovery of a Lost One
- 36 Loss of Beloved Ones

The wise writer will continue to observe human nature in action and design his new conflicts of motives and events using characters appropriate to his purpose. So far from being depressed by the 36 he will say to himself: I'm going to find a plot which is quite outside the Politi classification. And since nearly all of the 36 deal with evils of a grave or less serious nature he will try to find something in which a *good* justifies itself.

WHAT HOPE CAN DO

The inventor who is busy with ideas calling for mechanical embodiment finds that moral qualities are as insistent in his life as in that of any other man. He can be so much impressed by the number and ingenuity of products from other men's minds that he is occasionally inclined to give up his own fight. This is not surprising when as frequently happens he has to conduct forty-five experiments to decide the sort of contraption required for a minor part of his intended mechanism. Yet success always demands its price and every kind of salvation calls for endurance to the end. That is why the plodder sometimes wins against a more brilliant competitor.

In this connection I wish once more to stress the virtue of *hope*. I do not refer to that kind of self-deception which creates an artificial hope as a mental habit. I mean hope that is opposed to the cynical outlook which thinks it is absurd to expect anything from anybody anywhere at any time.

The unexpected does happen. I open my *Daily Express*(1) and read this heading —

TEN IDEAS EACH IS WORTH A MILLION POUNDS

- (1) A motor-car that will use a rotary engine go sideways for parking be entirely gearless

(1) I am greatly indebted to the Editor of the *Daily Express* for permission to use this material

- (2) A light Diesel engine for commercial airplanes

* * *

- (3) A practical gyroplane, cheap, foolproof, that you or I could buy and park in the back garden

* * *

- (4) A light that will pierce fog In the saving of lives and of time in industry that will be worth £1,000,000 a year

* * *

- (5) Obtaining power from the sun, tides and the earth's natural heat

Said our millionaire, 'To-day the world's two principal sources of power, coal and water, derive their energy from the sun The sun draws the water from the ocean to the mountain tops Coal is sun's stored energy'

* * *

- (6) Fireless cities

'We must learn to distribute electricity long distances without loss of current Generate it at the coal mine itself Make the mine the central distributing station for the cities' heat, light and power'

* * *

Are you feeling six million pounds richer? Wait, there are four millions' worth of ideas to come yet

* * *

- (7) Cold light At present 95 per cent of electricity used for lighting is wasted as heat A cold light, such as the glow worm uses, would cut our electric light bills tremendously

- (8) Talking books A cheap, mass produced light and simple mechanism that would read our novels to us In the voice of our favourite announcer, perhaps
* * *
- (9) Grass paper A forest takes fifty years to grow, it is cut down to make paper, most of which is destroyed in a day
* * *
- (10) More synthetic food Vegetables, eggs, meat must be made containing food values scientifically balanced to meet the modern needs

Which of those ideas he is working on the million are does not care to say But, anyway, go ahead and take up this cool £9,000,000 he has given you

SIX FURTHER IDEAS

As if the ten were not enough, the next day's issue of the *Express* provided six more ideas Here they are:—

- (1) A non corrosive steel There are 1,200 000 000 tons in use in the world Seventy five per cent of it requires to be protected from corrosion before it can be used and while in use In Britain alone that costs £7,000,000,000 a year
* * *
- (2) Milk from grass, without the intermediate dairy stage Yes, don't laugh, eliminate the cow Scientists already working on that You'd better hurry
* * *
- (3) A magnesium alloy as strong as aluminium Scientists already working on this too Such an alloy will be one third lighter than aluminium Revolutionise airplane manufacture

- (4) Recovering printing ink from used paper There's millions in this Separation of the ink would improve the value of the used paper as well

* * *

- (5) Certain common cold preventive Yes, it's an old, old problem, the older it gets, the more valuable its solution Sneezing and snuffling costs British industry £50 000 000 a year There'd be plenty for you

* * *

- (6) Perennial wheat Scientists are after this too They want wheat which comes up again next year without ploughing and re sowing fresh seeds

Six ideas Industry says they're worth a million each Take them For nothing Feel any richer?

* * *

BRAINY DAYS AHEAD

I have reproduced these lists for several reasons, one of them being that we are living in days when new ideas are becoming more and more a component of our intellectual life, days when all who aspire to do something may play a part in the production of contrivances or amenities which mean a great deal to our common life In short, despite appearances we live in days of hope

The newspapers may tell a tale of woe every morning with their accounts of murders, thefts assaults, lies trickeries, and irregularities generally, but they give other news as well Often enough this news is both interesting and stimulating For instance, one Sunday morning a little

lazily I opened out one of my newspapers and read the heading —

MICKEY WAS A REAL MOUSE IN THE LONG AGO"

Quite true. Walt Disney did not discourage mice who came into the office in the very early days. Indeed he tamed some of them and one in particular became very friendly.

He used to run across the ledge at the top of my drawing board. He'd sit there and watch me or wash himself sit and think. Through him I got to know everything about mice—or at least an awful lot. And he was the origin of Mickey Mouse (1). But in all possibility Disney did not see in that little animal all that was to come later. As an artist and designer he was living his life interestedly, ardently and sometimes a little anxiously but he was living it—without idling away his time and without yielding to feelings of despair.

Another point: suppose that Disney had had less sympathy and less imagination and that he had bought a mouse trap and employed a killer cat. What then? Why Mickey would have been wiped out as a mouse with all the fame and funds that were later associated with his name. Disney proved himself to be a good *externalist* in the manner I have previously explained: the life around him in all its manifestations was a continual source of interest. To be dead to the outside world is a condition of mind and soul that exacts a fearful penalty.

COMPARATIVE ORIGINALITY AMONG THE NATIONS

There is a final question. What nation is likely to produce the best of our new ideas both in number and

(1) *News of the World* April 7, 1940

quality? Nobody knows the answer. But there are noticeable facts which give some indication of superiority in this respect.

I once carried out a little bit of private research on comparative originality and I arrived at results which were, in some ways quite unexpected. My starting point was this: that originality of thought and action depends not so much on the possession of deep intellectual power as on an urge for mental adventure—what might be called an emotional dare. Men—and women—of this type are of course to be found in most countries great and small but I wanted to discover in what nations they are likely to be more in evidence than elsewhere.

After considering many analyses my list was as follows: The United States, Great Britain, Russia, Italy, and Sweden. I know quite well that other enquirers might emerge with a different list and they might defend their findings energetically. The exact truth is not easily ascertained. Anyhow, I will proceed to state the case as I see it.

ADVANCE THE U.S.A. WATCHWORD

When Crèvecoeur declared that the American was a new type of man, he drew early attention to a condition of mind in that country—a condition which he called a love of new and better ideas. In some respects it is an ideal; in other respects it is a working policy. One can feel it in the air.

During an eleven years' residence in the States I made a point of observing this tendency and I found it was not only a fact but occasionally a trifle expensive. For some times no sooner had a new invention been put to work than an improvement appeared and the first invention was thrown into limbo. There was and is a great struggle among new ideas and only the fittest survive.

The activities of the American mind are based on the concept of *advance* and that advance exists as a *lure*. It must be early not late. Hence the passion for breaking records and hence the advent of new ideas to make this possible. Emotional dare is in the atmosphere. Mr John D. Greene in *The American Magazine* (July 1941) has given a striking picture of 30 000 youngsters members of junior science and engineering clubs staying after school to tackle research problems that have proved too tough for their elders. At the outset this sounds queer to the average European unacquainted with the nature and quality of American urge and he may ask a sceptical question as to *results*. Mr Greene smiles amicably and then tabulates just a few by way of introduction. A seventeen year old Californian lad developed a radio about the size of the palm of your hand that will both receive and transmit messages and the authorities in the Army are considering its possibilities. A boy in Boston has constructed a new type of dark room—a portable glassed in box with sleeves for the photographer's arms. The sides are coated with red gelatine so you can see what you are doing but the light will not spoil the film. With it you can develop films in a lighted room.

As to inventions in the making we are told of a youth who is experimenting on a process to transmit sound on a beam of light—a project which might revolutionize the acoustics of halls and theatres. Another youth fourteen years of age is working on the effort to transform kitchen waste into fertilizers carbon and coal tar substitutes. All this I regard as excellent and at the end of the section I shall say a word or two as to its true inwardness. Meanwhile a nation which can train its youngsters in this fashion must be a nation in which material originalities are highly

productive. And that is exactly what we do find. The United States, as a country, has a penchant for new ideas.

GREAT BRITAIN HAS AN URGE

In Great Britain conditions are different, partly on account of the long history of its people, and the numbers of inventions, small and great, which have appeared during the past two centuries. Invention, in Great Britain, is governed for the most part by *tradition*, that is, the amount of effort in this direction is kept up by a sense of what has been, and must therefore continue to be, the rule. If, in a certain district, a particular kind of invention, say for cotton spinning, has been prominent, there will be a tendency to keep it up by adding improvements, but, while the tendency is instinctive in the individuals concerned it is fostered by associations due to past efforts and achievements. The desire for new ideas is present, and in action, but it is quiet rather than vocal.

Of course there had always been a deep seated curiosity in the British mental constitution, that is, in minds that are capable of serious enquiry, of which the number has always been considerable. There is a feeling that a reputation won during the course of a long and creditable inventional history should be kept up. And new successes tend to keep the new spirit alive. *Life*, an important American magazine, says that 'one of Britain's biggest contributions towards the war has been the export of ideas, some of them indispensable to victory.' The article goes on to add that "the list of British inventions and technical developments in the last four years is amazing" (*Daily Mail* report, June 11, 1943).

WHAT RUSSIA MAY DO

The Slav intellect in its connection with the subject before us is full of unusual interest. If you were to put

an American a Briton an Italian a Swede a Russian a German and a Frenchman into a room together—all men of science—to discuss a proposal involving a striking departure from the usual the chances are that the weirdest suggestion would come from the Russian. His mind has the quality of detachment—that is if he gets a notion which is almost extravagantly wild it is not instantly rejected on that account. It might indeed be welcomed. One morning I read in my newspaper that a Russian scientist claimed that the law of gravitation was more active in the region of Moscow than it was elsewhere. Was this a bit of subtle political humour? Maybe so. And maybe not. But it does make plain the kind of idea that may appear in the Russian mind and receive hospitality for what it is worth.

Here at last is one explanation of the readiness with which Russia turned from Czarism to Communism. The national mind saw no objection to the entire destruction of the past nor to the acceptance of a plan that was drastically new. Herein lies great promise for the future. A nation that can conserve past values politically and begin a new era *de novo* cheerfully and confidently cannot but have vast possibilities of development. These possibilities may not always be realised but the impetus is there and it is in operation all the time.

AND ITALY

The Italian temperament is basically emotional and for that reason is in line with movement by which I mean a readiness to place the intelligence in situations wherein imagination can picture things that *might be* in contrast with things that *are*. Primarily the Italian is an artist rather than an analyst and a logician. Mussolini could invent beautiful uniforms and design a military campaign

with picturesque detail but his sense of African realities proved to be sadly deficient

An emotional nature plus an active intelligence is bound to develop persistent curiosity and this curiosity—so marked in the famous Leonardo—is the basis of all Italian achievements past and present. Duly applied to such problems as confront the progressives and the *literati* of every civilized nation this disposition towards discovery plus an industry that is never lacking is bound to produce significant results in mechanisms as well as in the arts and perhaps in the sciences also

SWEDEN TO MAINTAIN ITS RECORD

Sweden although a small country has given to the world a considerable number of important inventions a fact which argues the existence of progressive education in science, and of a temperament which looks on new ideas with favour. However the motive for advance is now rather like that in Britain—that is there is a kind of school of inventive science and art in Sweden which not only keeps up the spirit of adventure among ideas but directs and controls its activities. When we hear the remark 'It is a Swedish invention' one is led to expect something sound and serviceable.

Saved thus far—1944—from the terrible sufferings which Germany has inflicted on other European nations Sweden should have the advantage of a better start after the conclusion of Peace and it will not be unreasonable to expect some striking developments in the next few years. The needed ability, tendency, and tradition are all present.

It now remains to be said that countries other than those I have mentioned may be expected to favour the world with new and valuable ideas for in a population of many

millions forty to eighty let us say there is certain to be a number of minds that are highly productive. Moreover if those countries are or have been politically or economically depressed an urge is thereby created to compensate for such conditions by intellectual or scientific achievements on a great and improved scale. Inferiority consciousness is not a figment of the imagination. It is a force. The urge to do something distinctive is terrific.

In Hitlerite Germany *knowledge* was in a state of condemnation. The one thing to know was Nazism, and the one thing to be done was to exalt it and reduce the rest of the world to slavery. It will take the Teutons a great many years to recover all the symptoms of their former prestige and even then their tendency to imitate or to make improvements on what other nations have produced is not in the first order of talents.

THE WORLD MAP OF ORIGINALITY

The interested reader who would like to pursue this enquiry further might take a map of the world—Mercator's projection—and endeavour to draw two lines across it—slightly wavering lines—indicating the zones wherein future originalities in science art economics philosophy and government may be forthcoming. Where to begin? That is decided by one fact—that those countries with a temperate climate are the countries from which we may expect the most results. The tropics and semi-tropics are not ruled out but they are not favourable spheres. Too much energy is consumed in resisting heat. Of course the same remark applies to the icy cold countries where resistance is needed for reverse reasons.

As a competent guide it is well to have Huntington's *Climate and Civilization* ready for reference.

WORKING FOR SELF—AND OTHERS

If the reader is still young he has a chance of combining personal ambitions with aims of a wider range—that is he can link the expression of his own interests with the welfare of the country in which he was born and of which he is a citizen. To work for this larger issue is always a healthy undertaking. It redeems effort from the charge of being self-centred, releasing benefits for the community, and not restricting them to the individual. Much will depend on the nature of the work involved. If it is the getting of new ideas for the dressing of a window, or a programme of editorials for a weekly, or the provision of a new winter spray for fruit trees, the gain to the public, although appreciable, will not be as definite as the invention of a new propulsion method for ships or a system of housing which will greatly reduce rents.

So we leave our aspirant as he seeks to apply the preceding pages to his own affairs. A rapid survey of the whole will convince him that the plan suggested is simple, workable, and should be successful. The truth in tabloid form is this. New ideas will come to you if you obey the laws of the human system—brain, body, and environment working in complete harmony.

The new age that is before us will contain opportunities of a number and quality which have never appeared in any previous epoch of civilization. Do you doubt that statement? Well consider the past history of the world. Between the age of Pericles and the year 1870 there lived on this planet 45,000,000,000 people, writes Professor Giddings, and only one in every 450,000 attained any distinction (1). That proportion is likely to be greatly increased in the days that are to come. And there's a chance for you!

(1) *Sociology* pp. 114-20

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